Rangelands

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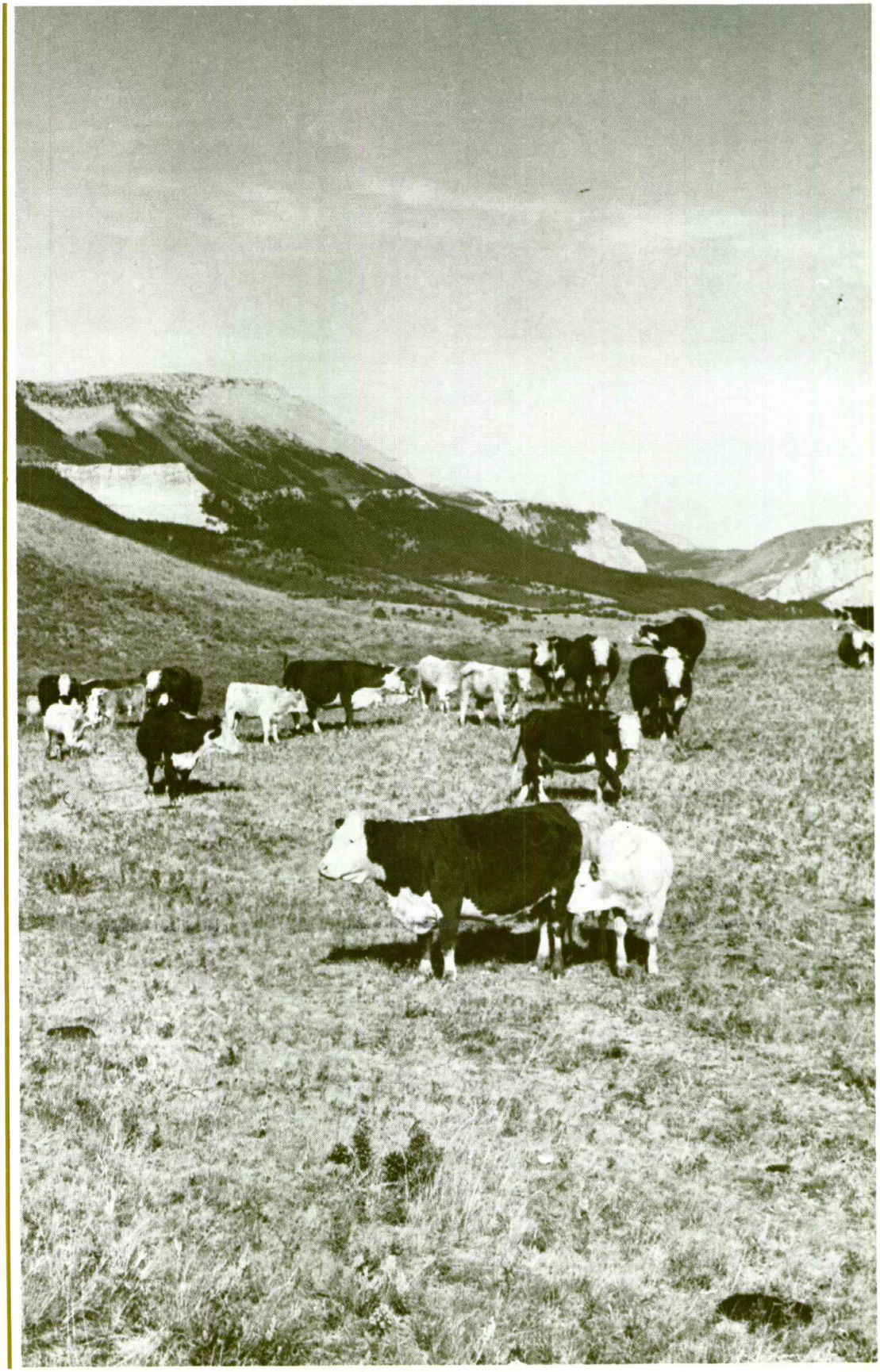

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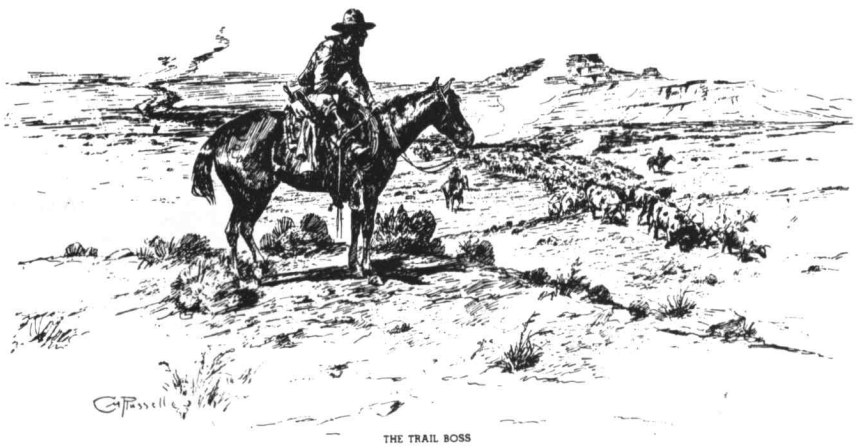

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The objectives for which the corporation is established are:

—to develop an understanding of range ecosystems and of the principles applicable to the management of range resources;

—to assist all who work with range resources to keep abreast of new findings and techniques in the science and art of range management;

—to improve the effectiveness of range management to obtain from range resources the products and values necessary for man's welfare;

—to create a public appreciation of the economic and social benefits to be obtained from the range environment;

—to promote professional development of its members.

Membership in the Society for Range Management is open to anyone engaged in or interested in any aspect of the study, management, or use of rangelands. Please contact the Executive Secretary for details.

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Cover: Cattle grazing has always been important in the history of Utah since the first settlers arrived. See related story on page 214. Photo courtesy of Utah Cattleman's Association.

Coming of Age in Range Management

Thadis W. Box and Linda Howell Hardesty

WE HAVE ALL BEEN SUBJECTED TO JOKES about range management being the proper care of stoves. Comments heard at the last few meetings of the Society for Range Management lead us to believe that many in the profession are almost as unsure about what our field is as an Easterner who asks naive questions. This comes at a time when the term "range management" is being used much more widely than before, both in this country and overseas, and when more demands than ever are being made on rangelands.

Rangelands are no longer viewed just as areas for red meat or livestock production. They have come to be accepted as multiple use lands that produce wildlife, recreation, water, wood products, minerals, and energy. In addition, since they are usually lightly populated, they are prime targets for waste disposal and for defense installations. We believe that not only has the concept of range and rangeland changed but that the range profession itself is in a dynamic situation responding to changes on the rangeland.

The terms "range" and "rangeland" are apparently American in origin. Range people, however, have seldom defined the terms. Most writers before the turn of the century described range as open grazing land. In 1936, U.S. Senate Document 199, 74th Congress, described range as follows:

> The western range is largely open and unfenced, with control of stock by herding; when fenced, relatively large units are enclosed. It supports with few exceptions only native grasses and other forage plants, is never fertilized or cultivated, and can in the main be restored and maintained only through control of grazing. It consists almost exclusively of lands which, because of their relatively meagre precipitation or otherwise climatic conditions, or rough topography or lack of water for irrigation, cannot successfully be used for any other form of agriculture. In contrast, the improved ranges of the East and Middle West receive an abundant precipitation, are ordinarily fenced, utilize introduced forage species, follow cultivation for other crops, and are often fertilized to increase productivity, and are renewed following deterioration (U.S. Senate 1936).

The standard textbooks in range management have likewise been reluctant to define range. Sampson (1923) described rangeland in much the same way as the Senate Document quoted earlier. Stoddart and Smith (1943) followed a similar definition of range as being open areas grazed by livestock. In later editions they have broadened the concept some but still describe range rather than define it. Marion Clawson (1950) was content simply to define range as the land upon which animals graze. A widely accepted and quoted description of range was given by the late Francis Colbert when he was secretary of the Society for Range Management. He said:

> I want to emphasize in the strongest possible way that range—or rangeland or range ecosystems—is a kind of land and not a land use.
>
> I must admit the word "range" has always been associated with livestock grazing (a specific use) on uncultivated lands and that this connotation is still prevalent especially among the general public. . . . Nevertheless, rangelands comprise at least 40 percent of the total land area not only of this country but the entire world, so I believe it is time that we made a serious effort to recognize range for what it is: a kind of land—a major land resource—from which there is, and can be obtained a wide variety of products and values, of goods and services (Colbert 1977).

Although Colbert's description of range as a kind of land is widely accepted in the profession of range management, it is still common to hear people, some in official capacities in government agencies, refer to range as a use. They often lump it with other uses such as wildlife, recreation, wilderness, etc.

THE DEFINITION OF RANGE MANAGEMENT HAS ALSO changed over the years. The definitions given in range management texts will give an idea of the changing concept of range management. Stoddart and Smith (1943) in their first edition of *Range Management* defined range management as "the science and art of obtaining maximum livestock production from rangeland consistent with conservation of land resources." They used the same definition in their second edition (1955). Sampson in his textbook (1952) defined range management as "the science and art of procuring maximum sustained use of the forage crop without jeopardy to other resources or the uses of the land." Thus all students using either standard textbook for range management were taught that range management was an art and science of maximizing either livestock products or forage.

The third edition of Stoddart and Smith's textbook published in 1975 defines range management as "the science and art of optimizing the returns from rangelands in those combinations most desired by and suitable to society through the manipulation of range ecosystems" (Stoddart, Smith and Box 1975).

By examining the definitions or descriptions used for range and range management during the last half century, several changes become apparent. First, range has evolved from a use to a type of land. The management of that land has been broadened to include many goods and services other than forage or livestock. The concept of optimizing a mixture of goods and services as opposed to maximizing a single

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output has been introduced and apparently accepted in the range profession. The concept of considering range a type of land, such as forest or cultivated land, implies that many uses will be made and that the art and science of range management must be integrative rather than singe-use oriented.

ANOTHER IMPORTANT ASPECT OF THE CHANGE in range management is the body of knowledge and well-established terminology that has built up over the years. For instance, Sampson, Stoddart and Smith, and other early textbook writers quoted mostly articles from popular magazines or senior student theses as their source of references. More modern literature quotes scientific research from a number of journals throughout the world, and the *Journal of Range Management* has become the standard for publication of rangeland literature.

The field of range management has greatly increased its geographic scope. Originating in western North America, the American Society for Range Management was established in 1948. Its concepts were accepted worldwide. As its influence changed from American to global, it changed its name in 1970 to The Society for Range Management. It is now truly an international society, with members in over 35 countries throughout the world.

Not only has the Society for Range Management been successful in the North American continent but similar groups overseas have also formed. In the past there have been short-lived sections of the Society for Range Management in East Africa and Iran. One of the best evidences of success is that sister societies are being formed. The Australian Rangeland Society publishes its own journal and was the host for the second International Rangeland Congress in May of 1984. An informal group in North Africa is now exchanging ideas and may eventually lead to a French-speaking North African rangeland society.

The concept of rangelands and range management has been accepted widely and equivalent terms developed for other languages. Up until a few years ago people working on native rangelands were often called pasture agronomists, plant ecologists, or some other term. Now many positions are advertised asking for someone trained in range management. The concept of the ecological management of arid and semiarid lands has become well established in such agencies as Food and Agricultural Organization of the United Nations, German Technical Aid, World Bank, U.S. Agency for International Development, and other donor organizations.

WHILE OUTSIDE GROUPS HAVE CHANGED their ideas and concepts about range management itself, the concepts and philosophy of the profession have been changing from within. Range management was originally a biological science, calling strongly on plant ecology and animal husbandry. The word "management" in the title implied economic use, so economic concepts were early added to the bag of tools of the professional range manager. More recently sociology and political science and other social sciences have become increasingly important. Almost every range person working in the United States will find that part of his or her work will be associated with the National Environmental Policy Act, the National Forest Management Act, the Federal Land Management Policy Act, or some other legislation. A knowledge of markets, taxation, public policy, and human behavior is necessary to the job of range management.

In most overseas posts, knowledge of pastoral people, cultural values, sociology, etc., may be as important as biological expertise. The scientific approach has also changed. Research work has moved from descriptive to experimental and become much more quantitative. The range manager of today is by necessity much more thoroughly trained in the basic biological and physical sciences as well as economics, sociology, political science, and other social sciences.

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THE KINDS OF PEOPLE WHO CALL THEMSELVES range managers have also changed through the years. Originally the community of range managers was made up of biologists, mostly plant ecologists, animal husbandry people, foresters, soil scientists, and other recognized professions working with rangelands. From the beginning the Society for Range Management has accepted all who had an interest in range management, regardless of their training. Today, the Society is still a mixture of people with varied training. Ranchers and environmentalists, social scientists and biological scientists find themselves mingling at annual meetings. The cowboy image signified by the range boss is not as evident as a few years ago.

Women are having a significant impact on the profession and the way land is managed. A few years ago women at an annual meeting were primarily part of the wives' groups and some discussion was made of forming a range management auxiliary. Today many of the people giving papers on programs are women. A quick count of the papers in the Society's publications indicates that more women are publishing articles than ever before. The leadership ability of women is apparent. A number of student chapters have had women presidents, women are serving on major committees, and at least two state Sections have awarded women the Rangeman of the Year honor. Out of this mixture of people trained in many different fields with interests ranging all the way from protection to productive use has come a demand for a higher degree of professionalism.

IT IS INTERESTING THAT THE DEMAND for professionalism many times comes from people who themselves would not meet a test of a professional range manager. It appears that those people on the fringes of the Society recognize the need for professional competence greater than those in the hard core range field.

With the demand for professionalism we cannot escape the question, "Is range management truly a profession?" There are a number of standard tests for a profession. Some of the major ones are (1) the group is organized primarily for service to others; (2) there is an established body of knowledge; (3) the group has a self-enforced code of ethics; (4) the group has a self-enforced code of behavior; (5) the group is self-policing, self-criticising. In addition to this, it is implied that a profession will have some sort of minimum standards and that the loyalty of the individual will be to the profession rather than to the employer.

The Society for Range Management or the profession of range management exists primarily to serve others and has an established body of knowledge. The Society has also published a code of ethics and a code of behavior. It is our contention that we are moving toward the self-enforcement required to truly qualify as a profession. The Society now certifies consultants. One does not receive a stamp of approval from the Society until he or she demonstrates that he or she meets rigorous standards endorsed by the Society as a whole.

It is interesting that the demand for professionalism many times comes from people who themselves would not meet a test of a professional range manager. It appears that those people on the fringes of the Society recognize the need for professional competence greater than those in the hard core range field.

The Society also accredits curricula in range management at universities. The Society will visit schools that do not meet accreditation requirements and suggest changes that could lead to accreditation.

IT IS NOT AS EVIDENT that the Society has become proficient in enforcing its code of ethics and code of behavior. Although these documents have been published, we know of no instance where a Society member has been reprimanded or disenfranchised for failure to meet ethical or behavioral standards.

We are not suggesting that all members of the Society for Range Management meet a specific requirement for training or background. It would be desirable if all could meet the ethical and behavioral standards agreed upon by the Society. We believe that the Society for Range Management needs a broad mixture of different kinds of people. The virtues of rangelands are called to the attention of the general public by evangelists who preach range management. There are others who are, and should be, analysts, who study specific parts of the range system and provide knowledge for others to use. There are advocates who will take a particular cause and carry it through the political system. There are managers who attempt to apply what has been discovered. All of these types are compatible with true professionalism, provided they conform to a specific behavioral code.

We believe that the profession of range management, less than a hundred years old, has indeed had a significant and beneficial effect on the rangelands of the world. A brief review of the conditions of American rangelands underscores the impact made by the range profession. When the first European explorers came into the ranges of North America, they were amazed at their productivity. Literally thousands of head of buffalo, deer, and elk were seen. Grass was described in such glowing terms as "seas of grass," "grass belly-deep to a horse," or "an unlimited supply of forage for thousands of head of cattle." The first settlers, with their experience in more humid areas, accepted the apparent condition of the ranges as constant and expected them to support unlimited numbers of livestock. The truth of the matter is that, in most cases, ranges were grossly overstocked within two to three decades after permanent European settlement.

THE DETERIORATED CONDITION of the ranges was recorded by many people. Agronomist Jared G. Smith reported the following about the western ranges in 1895:

> There has been much written in the last ten years about the deterioration of the ranges. Cattlemen say that grasses are not what they used to be, that the perennial species are disappearing, and that their place is being taken by less nutritious annuals. This is true to a very marked degree in many sections of the country (Smith 1895).

Not only were the ranges in the Great Plains deteriorating, but others lost condition shortly after the area was settled. The first permanent settlers came to Utah in 1847. The following was taken from the *Desert News* of September 25, 1879:

> The stock raisers here are all preparing to drive their stock to where there is something to eat. This country, which was once one of the best ranges for stock in the Territory, is now among the poorest; the myriads of sheep that have been herded here for the past few years have almost entirely destroyed our range.

Similar comments are available for almost every part of the country, during this period. Out of these over-grazed, deteriorated conditions came a concern for the land itself. The seeds for the profession of range management were sown. Individual courses in range management were taught at western universities in the period shortly before World War I. Some control of grazing was practiced on National Forests, private land, and Indian reservations in the 1920's, but it was not until after passage of the Taylor Grazing Act in 1934 that all of the public lands were subject to some sort of grazing control.

Professional range managers in the twenties and thirties made a difference. In 1948 the Society for Range Management was formed and a group of people dedicated to the improvement of a particular type of land became solidified. Today we maintain that the ranges of North America are in the best condition that they have been in the century. Although it is difficult to prove such a statement, we think there is good circumstantial evidence. An investigation of the crude and imperfect range condition figures in the Senate Document 199 in 1936, the Public Land Law Review report in 1972, and the current Forest and Rangeland Renewable Resources Planning Act and Resources Conservation Act reports show a slow but steady increase in range condition. In addition, accounts of oldtimers who have lived and watched the ranges over the past three-quarters of a century report that the ranges are better now. There are many accounts in the West, for instance, of being able to

count the bands of sheep on the mountains from dust clouds. Such conditions are no longer acceptable. Comparison of photographs taken near the turn of the century with recent ones shows an improvement in the condition of the western range. Although none of these indicators can be quantiied,

This record of range management has not gone unnoticed. The philosophy and concepts of range management are being accepted worldwide. In almost every continent from China to Australia and Africa, the idea or concept of managing land on an ecological rather than an agronomic basis is now accepted. We believe that range management is beginning to work.

it is our professional opinion that most American ranges deteriorated within two to three decades after first settlement, began a slow but steady improvement sometime after the turn of the century, and are now in the best condition that they have been in the 20th century.

This record of range management has not gone unnoticed. The philosophy and concepts of range management are being accepted worldwide. In almost every continent from China to Australia and Africa, the idea or concept of managing land on an ecological rather than an agronomic basis is now accepted. We believe that range management is beginning to work.

IF INDEED RANGE MANAGEMENT is beginning to work, what does the future hold? In the future there will be more knowledge of processes within the system. There will be more available management data. There will be better tools as computers and other electronic devices are adapted to managing the land. There will be more and better-trained range people. But at the same time, there will be more demands put on the land. People will want more meat, more recreation, more water, more of all goods and services. There will also be more accountability upon the people who manage the ranges. Decisions will have to be made on data. To quote Pogo, we believe that we are faced with "an almost insurmountable opportunity." Much more will be demanded of the range mangers of tomorrow. We are confident that they will meet the challenge.

Literature Cited

Clawson, Marion. 1950. The Western Range Livestock Industry. McGraw-Hill, New York.

Colbert, Francis T. 1977. Land-use planning—a summary from the rangemans's point of view. Rangeman's J. 4:74-76.

Sampson, A.W. 1952. Range Management, Principles and Practices. John Wiley and Son, New York.

Smith, Jared G. 1895. Forage conditions in the Prairie Region. *In:* USDA Yearbook of Agr. U.S. Printing Office, Washington, D.C.

Stoddart, L.A., and A.D. Smith. 1943. Range Management, 1st Edition. McGraw-Hill, New York.

Stoddart, L.A., and A.D. Smith. 1955. Range Management, 2nd Edition. McGraw-Hill, New York.

Stoddart, L.A., A.D. Smith, and T.W. Box. 1975. Range Management, 3rd Edition. McGraw-Hill, New York.

U.S. Senate. 1936. The Western Range. U.S. Senate Document 199, 74th Congress. U.S. Printing Office, Washington, D.C.

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George E. Weaver
Wayne J. Weaver
Noel H. Wellborn
Dick Whetsell
Steve Whisenant
Warren C. Whitman
Gerald D. Widhalm
Kay W. Wilkes
Calvin E. Williams
Robert E. Williams
W. A. Williams
Robert M. Williamson
Terry Wilson
Leaford C. Windle
H. Peter Wingle
Gale L. Wolters
Waldo E. Wood
Jerome H. Wysocki
Jim Yoakum

A Winning Team for a Ranch

Gretchen Sammis

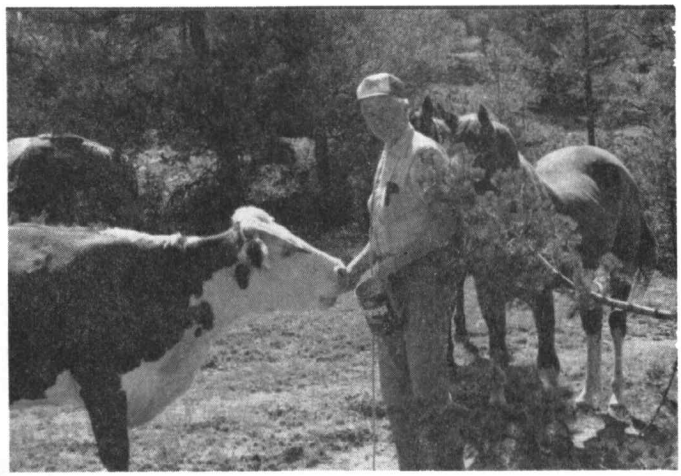
The Chase Ranch, located 4 miles northeast of Cimarron, N. Mex., in an area once populated by Jicarilla Apaches and Moache Utes, was founded by Manly and Theresa Chase in the late 1860's. They were one of the first "white" families to settle on the huge Maxwell Land Grant in northeastern New Mexico.

Mr. Chase went into the sheep business near Cimarron and then near Roswell, N. Mex. However, by the middle of the 1870's, Chase had also moved into the cattle business. The cattle operation was started with Texas Longhorns and Mexican cattle. Herefords were introduced into the herds around 1883. As the cattle business grew, so did the reputation of the Chase Ranch. Governor Lew Wallace was a frequent visitor; in fact, he wrote part of the last chapter of *Ben Hur* while visiting in 1880. By 1886, Manly Chase was said to be running more cattle in New Mexico than anyone else. At this time he was involved in 14 different livestock companies. Some of these were the Cimarron Cattle Company north of Ft. Sumner, the Red River Cattle Company near Wagon Mound, The Maxwell Cattle Company on the Land Grant, and the Luera Cattle Company on the San Augustine Plains in Socorro County.

Manly Chase planted an apple orchard (known as Chase's folly) in the late 1880's which is still producing. He was also instrumental in the formation of the Northern New Mexico Stockgrowers Association that was the forerunner to the present Livestock Board.

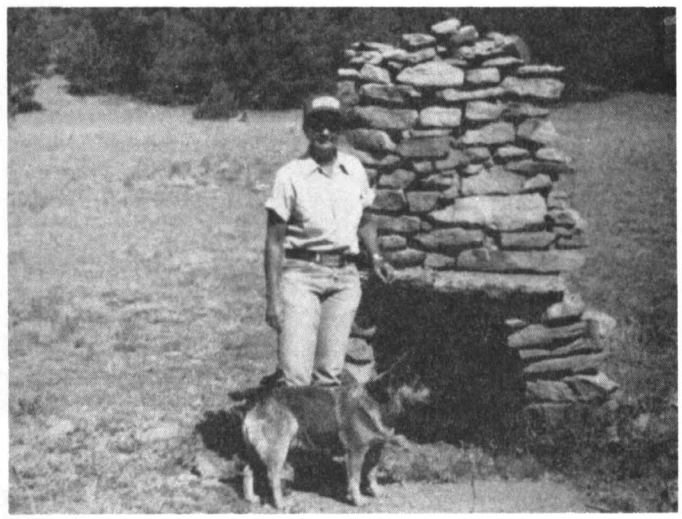
The Chases' 6 children were raised on the ranch and were indoctrinated into ranching almost from birth. As the family grew, so did the ranch house. The original 4 rooms were added on to until today the house consists of 14 rooms.

Today the Chase Ranch is owned and operated by Gretchen Sammis, who is Manly and Theresa's great-granddaughter. She grew up on the ranch and learned the cattle business from her grandfather, Stan Chase. She was sent off to college in hopes that she would find that there were better things to do than ranch. However, after teaching for many years, mostly in Cimarron, and running the ranch on the side, she retired from teaching and now devotes all of her time to the Chase Ranch. Talking with any of her former pupils, one is impressed by their assessment of a tough minded, generous teacher who is still missed. Gretchen continues to be involved in education and the community. She is the secretary of the Cimmarron School Board, Chairman of the Colfax Soil and Water Conservation District Board, a member of the Society for Range Management, the New Mexico Cattle Growers, and the National Cattlemen's Association. She has also served on the Agriculture, Stabilization and Conservation Service County Committee and the Executive Committee of the University of New Mexico's Alumni Board of Directors.



Gretchen Sammis

Sharing Gretchen's love of the ranch is Ruby Gobble. She is the foreman of the Chase Ranch and has been with the ranch since 1963. Ruby can do anything that needs to be done on a ranch. She is the heavy equipment operator, welder, mechanic, veterinarian, and chief cook and bottle washer. Ruby has been a cowgirl since she was 3. She learned to ride on burros caught on the desert close to



Ruby Gobble

Wickenburg, Ariz. By the time she was 12, Ruby was training her horse, Tony, to do tricks. Soon they were performing in rodeos all over Arizona and doing benefit shows for the children in the Phoenix area. After Tony's premature death, Ruby trained another horse, Taffy. Between the ages of 18 and 19, Ruby was queen of the World's Championship Rodeo at Glendale, Ariz., and appeared in the film "Trigger Gold" as the daughter of the Kane family. She was offered a place in Monty Montana's Wild West Show but declined because she was too busy roping. Her friends and teachers were Frank Macias and Everrett Bowman. As a member of the Girl's Rodeo Association, she was the World's Champion Team Roper in 1951, 1952, and 1953, and the World's Champion Ribbon Roper of 1953 and runner-up World's Champion calf roper in 1953 and 1954. Ruby was inducted into the National Cowgirl Hall of Fame in 1982. The Hall of Fame recognizes the spirit, strength, courage and stamina of western women. Miss Gobble is also a quarter-horse breeder and an accomplished guitar player. Her rendition of "Careless Love" could send anyone into stitches.

Between 1954 and 1966, Gretchen acquired full possession of the 11,000 deeded acres. For 20 years Gretchen and Ruby have worked to improve the entire operation. The cattle operation consists of Hereford cows and calves and some pasture yearlings. They are on a strict herd health program with their veterinarian as to pregnancy testing and inoculations. All calves are weighed individually and records kept on calves, cows, and bulls. Any cow or bull that does not produce the quality of animal expected goes to slaughter. The bulls are all top of the line registered Herefords and are health and semen evaluated each spring before going to their specific bunch of cows. Artificial insemination and synchronization has been used with qualified success. The goal in the cattle operation is to wean calves in October that will average over 600 pounds. Bulls are turned in with the cows April 15th and come out June 15th. Ruby and Gretchen are sold on the Savory Grazing Method but have not yet solved all the problems in implementing it on the Chase Ranch. The other operations included in the management picture are improving the irrigation systems, putting in more alfalfa, oats, and trying hay grazer (new forage variety). Last summer they raised enough hay to keep them all year. That was the first time in many years they had not purchased hay.

Being cattle ranchers in New Mexico or anywhere else takes some book-learning, a lot of hard work and a desire for excellence. Gretchen and Ruby have combined these factors with their commitment to the history of the area and their love for the land to have a ranch worthy of its heritage. They have proven themselves to be intelligent, independent women who strive for that intricate balance between man and nature.

Solar Power Used to Deliver Water

David P. Stevens

Some range areas produce good forage but are waterless. This is especially true of the pinyon-juniper type around Grand Junction, Colo.

Many P-J ridges and mesas on the Gibbler Allotment were chained and reseeded during the early 1970's. Lush stands of crested wheatgrass, needle grass, Indian ricegrass, western wheatgrass, and Junegrass now occupy areas that were once covered with pinyon and juniper and had little or no understory vegetation.

The Gibbler Allotment contains 45,500 acres, of which 10 to 12% had been chained, and in order to use the reseeded areas water had to be developed. This water was developed by constructing stock ponds, usually a dam across a drainage to catch the intermittent rainfall or spring snowmelt. In an area of 14- to 16-inch precipitation, rainfall is very intermittent; and so these ponds are not that reliable.

A more reliable source of permanent water was needed in order to use the forage available. Gibbler Spring, located on the edge of the chained area, was the best source of water.

Author is range conservationist with the Bureau of Land Management Grand Junction Resource Area, Grand Junction, Colorado.

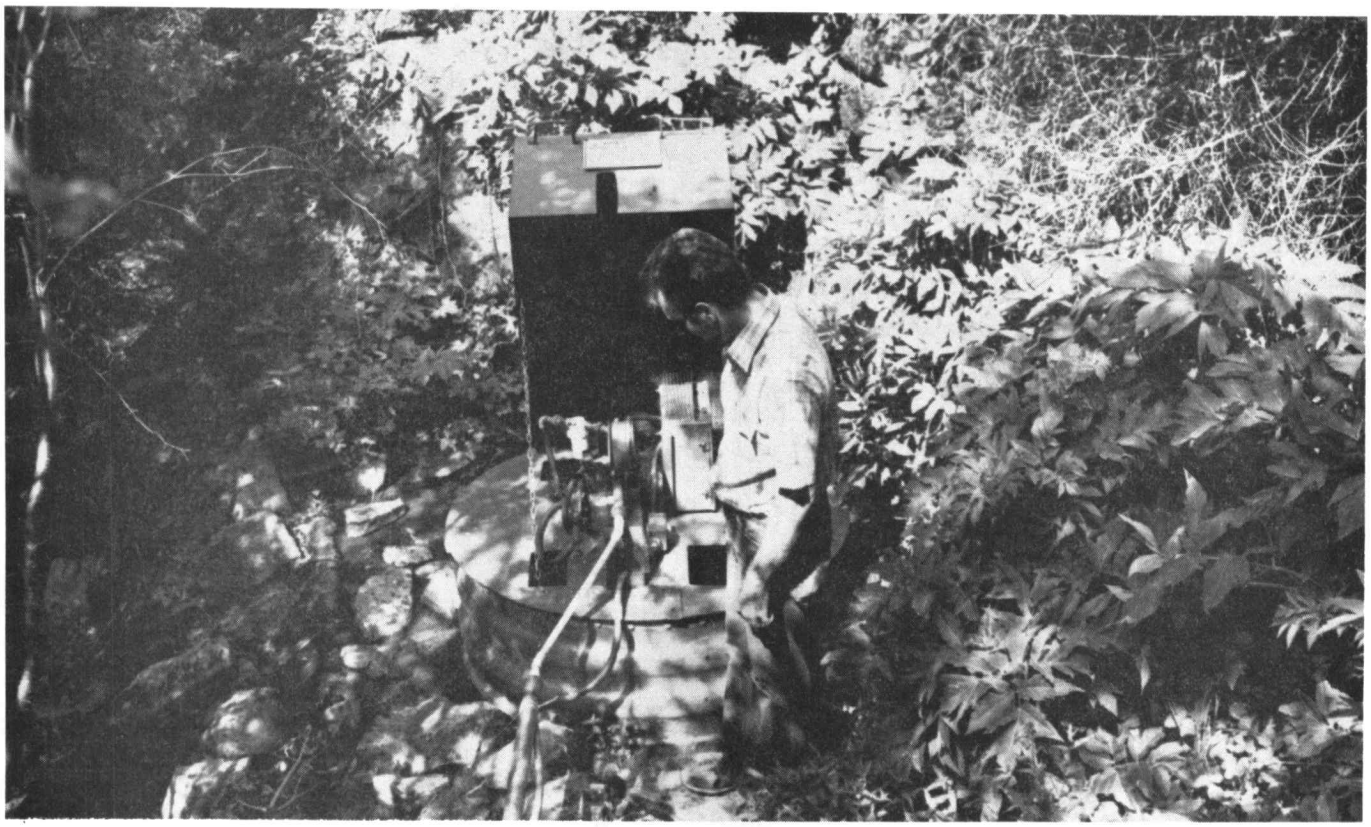
Problems encountered with the use of Gibbler Spring were:

1. The spring is located 10 miles from the nearest electrical source.
2. The spring is 240 feet down a steep canyon face.
3. The spring is next to a wilderness study area which would pose a problem if a gas generator were used, because of noise pollution.
4. Noise from a generator would lead to discovery and possible theft or vandalism.

A solar-powered pump was designed to handle the above-mentioned problems and deliver water from the spring to the top of the canyon. The whole system consists of a sump, solar panels, pump, pipeline, and catchment.

Water Source (Sump)

The seep was dug out to a 5′ × 10′ × 2′ dimension. The hole was lined with Hypalon rubber. A 2-foot section of a 4-foot culvert was used to hold the water. Gravel was packed around the culvert to allow water to filter into the punctured culvert. A 1/2-inch steel plate was fabricated to be used as a cover for the culvert and as a platform for the pump and transformer.



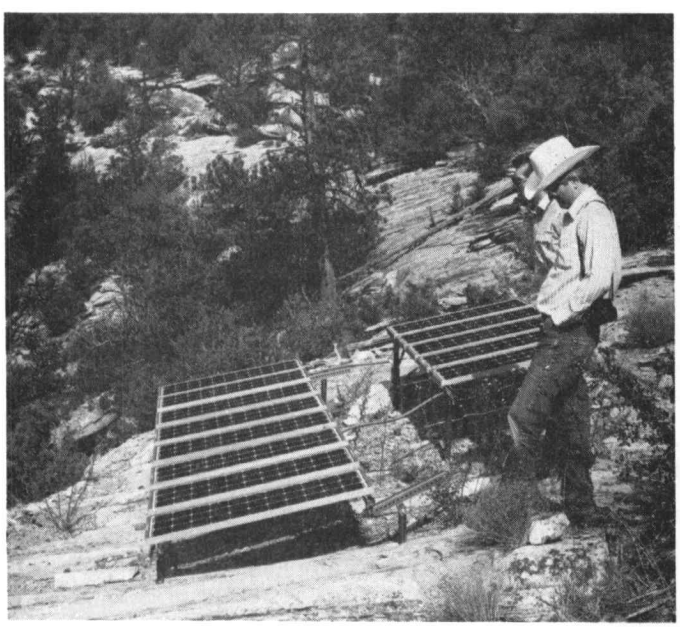
Dave Stevens observing the spring box, transformer and pump at Gibbler Spring.

The Photovoltaic Panels

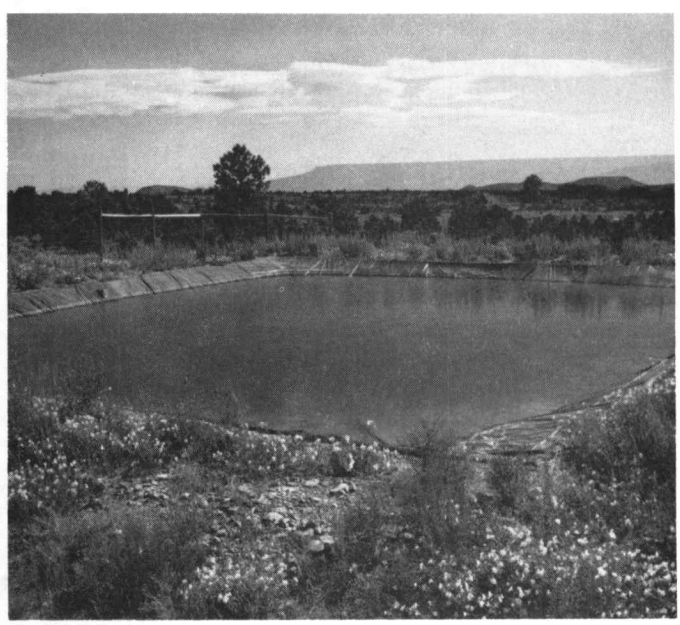
An array of 13 panels was arranged on a metal support structure that was bolted to an exposed sandstone bench, 100 feet below the rim of the canyon and 100 feet above the spring. The panels in place can withstand a 50-psf (pounds per square foot) wind load and 100-mph winds.

Two hundred and forty volts DC current can be produced by the panels. Amperage varies between 0.5 and 4.0 AMPs depending on the cloud cover.

Conduit, carrying the wiring, was laid and fastened along the canyon face down to the pump. The transformer and



George Innis, not shown, CSU Range Science Dept. and Dave Steven, BLM, admiring the solar panel array.



60,000 gallon holding catchment with deer-proof exclosure fence.

power tracker are used to convert solar power into power to run the pump.

Pumping System

Water had to be pumped uphill with a 240-foot vertical head of pressure. A piston pump with approximately 0.55 hp was used. Water was pumped to the top of the rim through 1 1/2-inch galvanized pipe. From the rim to the catchment, 1 1/2-inch plastic pipe was used. The pumping rate was 4 gpm.

Water Storage

A Hypalon, rubber-lined dugout catchment was used to store the water once it was pumped uphill from the spring. The capacity of the catchment is 60,000 gallons. The inlet to the catchment is equipped with a float valve which activates a pressure switch on the pump. When the catchment becomes full, the pressure switch turns the pump off.

At present, five troughs are filled with the catchment. These troughs are scattered along three and one-half miles of pipeline. In the future another three and one-half miles of pipeline will be laid in order to cover the whole chained area. The whole pipeline system will be served from the Gibbler Spring solar pump.

The solar system was chosen for this project and locality because of its dependability, low maintenance costs, and low initial costs. All other types of pumping systems were deemed more expensive due to the inaccessibility of the spring. Vandalism to the solar panels is the biggest concern at present, but so far they have withstood one season of hunting and firewood gathering.

Ranchers Control Leafy Spurge

C.A. Lacey, R.W. Kott, and P.K. Fay

HOW DO YOU STOP a weed that has a 15-foot deep root system and reproduces both by seeds and vegetative buds? These questions are being asked by many Montana ranchers in their battle against leafy spurge (*Euphorbia esula* L.).

Leafy spurge is a deep-rooted perennial that was introduced to North America from Russia about 1827 and has rapidly become a troublesome weed in the north central United States and southern Canada. It is estimated that the weed currently infests 2.4 million acres in North America, with severe infestations in Montana, North Dakota, Nebraska, South Dakota, and Wyoming.

Leafy spurge has invaded about 545,000 acres of range and pastureland in Montana and millions of additional acres of range are threatened. Once the weed is established, it competes with desirable vegetation and reduces grass production by as much as 50%. Since cattle generally avoid grazing in infested areas, carrying capacity can be reduced up to 75% by leafy spurge. This converts to an annual loss of about $4 million dollars to Montana's cattle industry.

Biological Control

Researchers in Canada and the United States are studying the use of insects and pathogens for controlling leafy spurge. Three insects have been released in Montana. The spurge hawkmoth *(Hyles euphorbiae)* was released in 1978 and scientists are now trying to increase the population of this insect. A clear-winged moth, *(Chamaesphecia tenthrediniformis)* was released in 1977, but was unable to become established. A root-boring beetle, *(Oberea erythrocephala)* was released in 1982 and is considered another potential candidate for control of leafy spurge.

Plant pathogens, organisms which produce diseases in plants, also have potential as biological control agents. Research is being conducted to identify and screen pathogens which would help control leafy spurge.

Biological control methods have a long-range potential; however, there are problems. First, selecting, screening, and releasing an agent is slow and costly. It is estimated that control of leafy spurge will involve at least 20 scientist years at a cost of $2 million dollars. Second, even if some agents are effective on leafy spurge, the level of control on the weed may not be adequate.

Chemical Control

Researchers are recommending the use of selected herbicides for leafy spurge control. Tordon is the most effective herbicide currently available. However, in most cases it must be reapplied after 3 years. Banvel and 2,4-D will provide control of the topgrowth, but must be applied annually. Cost of the herbicide and application for three years ranges from $15 to $120 per acre depending on the chemical and rate that is used. Although these herbicides can provide control of leafy spurge, in most cases, complete eradication of the plant is not possible.

Ranchers' Opinions

Many Montana ranchers have been using herbicides for leafy spurge control. However, according to Wilbur Holmes, a retired rancher in Absarokee, there are some problems. "We didn't have Tordon back in 1940, so we used 2,4-D. The problem with leafy spurge is that it will grow right in rocky ground or down along a stream bank. That makes controlling the weed with herbicides very difficult. Even where we could spray spurge, it always came back and we seemed to miss patches when we were spraying. Leo Lesnick, a neighboring rancher, agrees with Wilbur. "I sprayed leafy spurge for over 20 years with 2,4-D and each year the spurge was back," said Leo.

Authors are research assistant, Plant & Soil Science Department; extension sheep specialist, Montana Cooperative Extension specialist; associate professor, Plant & Soil Science Department, Montana State University, Bozeman, respectively.

About the senior author: Celestine Lacey was born and raised on a farm in southern New Mexico and received a B.S. degree from New Mexico State University. She worked for 5 years for the Soil Conservation Service correlating soil survey information with range site data in New Mexico and Utah. Currently she's working on a M.S. degree in agronomy specializing in weed science with a minor in range management at Montana State University.

Goals: Several weed species are becoming a major threat to the productivity of range and pastureland in Montana. These weeds are highly competitive and can reduce desirable forage production and impair the quality of wildlife habitat. Lacey says, "Our goal should be to develop ecological and and economical techniques for controlling weeds on rangelands."—D. Freeman

Wayne Pearson surveys the effectiveness of herbicide applied in 1979 on leafy spurge. Photo taken in 1983.

Wayne Pearson (a rancher, Stillwater County weed supervisor, and president of the Montana Weed Association) has been conducting herbicide trials on leafy spurge for the past 9 years. "On old established leafy spurge plants, we've found the roots killed only to a depth of 18 inches even with our most effective herbicides. Therefore, in two or three years, the plant comes back and retreatments are necessary." Wayne has found that young spurge plants can be eradicated by Tordon since the root system is not well established.

Grazing Use of Spurge by Sheep

Wilbur Holmes first began using sheep to control spurge on his ranch in 1946. "The sheep did not appear to utilize leafy spurge during the first few years; however, by the early 1950's we had the plant under control," said Holmes. "We also found that unlike herbicides, the sheep didn't miss a plant and we made money on our lambs." Wilbur disagrees with landowners who report that sheep will not consume leafy spurge unless forced to the plant by over-grazing. "We never had to crowd the sheep to the spurge. There was always planty of grass, and the sheep ate the spurge in a free-choice pasture situation."

Pasture on Lesnick ranch after sheep grazing controlled spurge. Leo estimates that this pasture was about 60% composition of leafy spurge before he started his sheep program in 1970. Photograph was taken in August of 1983 after sheep were removed from the pasture.

Leo Lesnick had heard about the success Holmes was having with his sheep controlling spurge and decided to give them a try on his ranch. "I had 250 acres that were about 60% leafy spurge," said Leo. "Some of the spurge was so thick that grass wouldn't grow." He estimated the average density of leafy spurge in his pastures was about 100 stems per square yard. "Now after grazing with sheep for 13 years, we have about 5% spurge, and the weed is only 2 or 3 inches tall in August.

Leo pastures 80 ewes with his registered Angus cattle and his stocking rate is 20 acres per cow unit per year. This is slightly below the recommended stocking rate of 17 acres per cow unit per year for his area. The most common grasses on his ranch are Kentucky bluegrass *(Poa pratensis),* bluebunch wheatgrass *(Agropyron spicatum),* and timothy *(Phleum pratense).* Spurge is the major forb.

Ranchers observe the effects of cattle grazing (left) and sheep grazing (right) on leafy spurge.

Holmes and Lesnick disagree slightly on the value of herbicides for spurge control. Holmes believes that a herbicide program can be combined with sheep grazing for a total control effort on a ranch. Leo feels that his sheep program has been so successful that he no longer uses herbicides. Instead, his spurge-infested areas are fenced and he lets the sheep control the weed. Leo believes that fencing is the biggest expense when part of a livestock operation is converted to sheep. Although some sheep are lost to predators, he still feels this is the most cost effective control method for leafy spurge.

Erling Peterson of Judith Gap, Bob LaBrum of Absorakee, David Maclay of Missoula and other ranchers throughout Montana also agree that sheep are effective in controlling leafy spuge. None of the ranchers found any ill effects on the sheep grazing spurge. In fact, several ranchers reported that lamb gains were greater on spurge-infested pastures. All the ranchers were quick to agree, however, that once sheep were removed the spurge would return.

Recent research conducted at Montana State University supports the ranchers' observations. A field grazing study showed that after a one- to three-week adjustment period,

sheep readily grazed leafy spurge. The percentage spurge intake increased during the summer. By mid-August, spurge made up 40 to 50% of each animal's diet. This study concluded that there were no harmful internal effects or loss of body weight in sheep grazing leafy spurge. In addition, sheep with no experience grazing spurge consumed as much spurge as those having previous experience. Therefore, leafy spurge could be classed as a forage species under summer use by sheep.

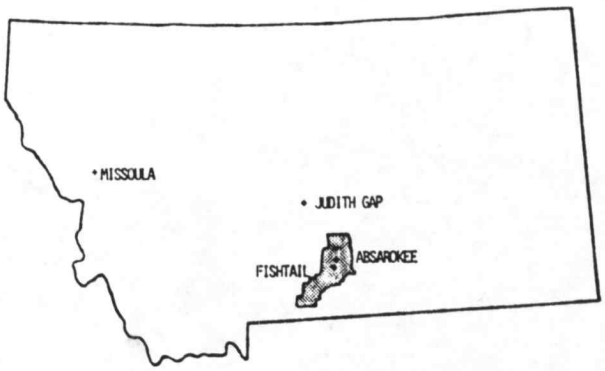
Celestine Lacey proudly observing a beautiful stand of bluebunch wheatgrass, the official State Grass of Montana.

Several Montana weed control specialists are now recommending the use of sheep for controlling large infestations of leafy spurge. For example, Wayne Pearson believes that sheep grazing is the best control method available for large acreages of spurge. To implement a sound management program, Wayne suggests fencing the spurge areas for sheep to stop the weed from going to seed. Sheep grazing should be combined with a herbicide program around the fringes of the infestations and on newly established spurge.

His advice to ranchers who have large infestations of leafy spurge is to view sheep as a weed control tool. Wayne believes there is no way to lose money with sheep since ranchers can sell the lambs at the same time they are controlling spurge.

Economical Spurge Control!

The addition of a sheep enterprise to the total ranch program has several advantages other than weed control. Lamb and wool are usually marketed at a different time of the year than calves. Therefore, sheep can improve the monthly cash flow of the total ranching operation. Also, an individual can schedule labor intensive activities within the sheep enterprise during slack periods and make more efficient use of ranch labor. A third benefit is that often, by grazing sheep and cattle together, the existing forage can be more efficiently utilized.



Map of Montana showing location of towns. Stillwater County (shaded area) is located in southcentral Montana.

The amount of time and effort that a sheep enterprise will entail is entirely dependent on the type of production desired. If sheep are viewed just as a method of weed control and little production is expected, then they will probably require very little extra effort. On the other hand, if the sheep enterprise is viewed as a source of extra income, one must be prepared to make a commitment toward the sheep operation.

Conclusion

Sheep grazing is an excellent method for controlling large infestations of leafy spurge. Although the sheep will not eradicate the weed, with a good management system, they will keep it from spreading. Sheep grazing as a spurge control tool also has advantages over herbicides: ranchers receive a high return for their investment; environmental hazards are reduced; and spurge can be controlled in inaccessible areas.

By utilizing the experience of ranchers and research data, the following management guidelines were developed for using sheep to control leafy spurge:

* Grazing should begin in the spring of the year when leafy spurge plants are several inches tall.
* Pasture rotations should be scheduled so that the spurge does not go to seed.
* If sheep are grazing spurge plants after seed set, the animals should be held for 5 days before moving to another pasture. This allows time for any viable seed to pass through the sheep.
* Sheep grazing can be combined with a herbicide program for optimum control of leafy spurge.

An Investigations Progress Report:

Vegetation and Soil Indicators to Hydrologic Potential

John C. Buckhouse

Watershed management investigations in Oregon's rangelands over the last few years have produced a number of interesting facets directed toward understanding the hydrologic potentials of these lands.

Investigations by Buckhouse and Gaither quantified potential sediments from intense, convectional storms by major vegetation ecosystem. The results were interesting in that remarkable differences are present. The forested systems, particularly larch systems, and meadows produced very little sediment (less than 10 lb/acre following a 4 to 6 inches/hour simulated downpour that lasted 30 minutes). Mountain grassland systems produced more—tens of pounds/acre; while sagebrush steppe ecosystems produced sediments in the hundreds of pounds per acre. The most potentially dangerous systems, hydrologically, were the juniper zones, which produced potential sediments in the thousands of pounds/acre with this kind of storm.

Mattison and Buckhouse further explored these relationships by looking at habitat types as an ecological refinement. We found that a refinement by habitat type and by range condition was possible, with the more productive sites experiencing fewer hydrologic problems. This hydrologically better situation is related to decreased bare ground, increased litter, and increased organic matter in the soil on the better, more productive sites . . . and with this increase in vegetation comes an increase in infiltration and a decrease in surface runoff and erosion.

Swanson and Buckhouse attempted to further refine this approach by stratifying sites according to presence of big sagebrush subspecies in the sagebrush steppe regions of eastern and central Oregon. We looked at the subspecies *tridentata, wyomingensis,* and *vaseyana* within the *Artemisia tridentata* species. The relationships between sagebrush subspecies and hydrologic potential were not consistent. There was a tendency for the lands supporting the wyoming big sagebrush group *(A.t. wyomingensis)* to be more erosive, but the overlap between all three groups was high and few significant differences appeared. What did become obvious, however, was that soil characteristics were very important. If soil platiness and/or soil viscularity were present, erosion potentials increased. On the other hand, as large rock fragments and coarse textured particles increased in the soil profiles, the erosion potentials decreased.

If you wish more detail on the studies already conducted, contact me for the following reprints:

Gaither, R.E., and J.C. Buckhouse. 1983. Infiltration rates of various vegetative communities within the Blue Mountains of Oregon. J. Range Manage. 36:58-60.

Buckhouse, J.C., and R.E. Gaither. 1982. Potential sediment within vegetative communities in Oregon's Blue Mountains. J. Soil and Water Cons. 37:120-122.

Buckhouse, J.C., and J.L. Mattison. 1980. Potential soil erosions of selected habitat types in the High Desert region of central Oregon. J. Range Manage. 33:282-285.

Swanson, S.R. 1983. Infiltration, soil erosion, nitrogen loss, and soil profile characteristics of Oregon lands occupied by three subspecies of *Artemisia tridentata.* Ph.D. Thesis, Oregon State University (abstract only available; several journal publications are in preparation, however).

Swanson, S.R., and J.C. Buckhouse. 1984. Soil and nitrogen loss from Oregon lands occupied by three subspecies of big sagebrush. J. Range Manage. 37:298-302.

The author is with the Department of Rangeland Resources, Oregon State University, Corvallis 97331.

Sewage to Meat?

Can municipal sewage be converted to beefsteak and lamb chops? "Yes," says Dr. Stan Smith in the New Mexico State University Range-Animal Science Department. Dr. Smith and his research team fed dried sewage to breeding herds of cattle and sheep after it was irradiated. Included in the study was a pelleted sewage base feed used with range cows.

In four of five years, sewage based supplements were about equal to cottonseed meal. Reproductive performance in both cattle and sheep do not appear to be different when fed supplements containing sewage or cottonseed meal.

For growing ewes and wethers, a 7% sewage solids diet is adequate. A higher level is needed to grow ewe lambs for breeding.

Historical Aspects of Winter Grazing

James A. Young and Raymond A. Evans

The range livestock industry has been enduring the seemingly endless burden of market prices that barely meet increasing operating costs and seldom provide an adequate return on investments. In order to survive on a long-term basis, ranchers have to adopt technological innovation that leads to greater efficiency and costs savings.

Recently, economists, among others, have suggested that on Intermountain ranges where growing, harvesting, and feeding of hay is necessary for wintering brood cows, a key factor in economic survival is winter grazing of wheatgrass seedings. Winter grazing consists of grazing livestock on rangeland during the winter months when the range forage plants are dormant. Normally, livestock would be dependent on forage from nonrangelands during this period, either as hay or crop aftermath.

This suggestion for winter grazing appeals to both ranchers and land managers. Hay production requires labor and capital, both of which are expensive and in short supply on most ranches. Winter grazing of dormant wheatgrass seedings offers the potential to control wolf plants. Wolf plants are vigorous wheatgrass plants, especially crested *(Agropyron desertorum),* whose remnant flower stalks limit livestock preference.

Proposed winter grazing has been greeted with such euphoria that we could not help but be reminded of a proposal for winter grazing published in 1871. This original proposal for winter grazing contributed to the boom in range livestock production during the late 19th century in Wyoming, Colorado, Montana, and the Intermountain area and also almost resulted in its demise.

Trans-Missouri Stock Raising
THE PASTURE LANDS OF NORTH AMERICA: WINTER GRAZING

"The Source of the Future Beef and Wool Supply of the United States" was the imposing title of a booklet published in Omaha, Nebraska in 1871 under the authorship of Dr. H. Latham, then surgeon of the Union Pacific Railroad. This publication with 88 pages of text provided the first description of ranching on the then new western ranges. It predated Joseph G. McCoy's "Historic Sketches of the Cattle Trade" by 3 years. Although General James S. Brisbin's book "The Beef Bonanza: or How to get Rich on the Plains" is often considered the first western range book, it was published 10 years after Latham's booklet. General Brisbin quoted Dr. Latham several times without ever identifying him or acknowledging his debt to the Doctor's booklet. In actuality, the general's book is largely a rewrite of Latham's publication.

The Union Pacific Railroad distributed Latham's booklet by the thousands in order to encourage settlement along the railroad right-of-ways. The myth of the Great American Desert was much alive during the relatively dry 1870's. The Union Pacific was hard pressed to attract settlers who would generate freight revenue.

Facts and Propositions

Dr. Latham originally published the material used in his booklet as letters to the editor of the *Omaha Daily Herald.* He used a hard-hitting, telegraphic writing style to introduce his ideas. His facts included a statement of a decrease in the total value of livestock in the United States at the same time the population of beef consumers was increasing. His propositions included the strongly worded supposition that the maintenance of a large pool of cheap labor for the nation's industry was dependent on providing a diet of red meat. According to the doctor, vegetable food alone resulted in degenerating the people. Where was the red meat to come from? The Doctor's answer was the billion acres between the Missouri River and the Pacific Ocean which he considered to be one immense pasture ground, boundless, endless, gateless, and all of it furnishing *winter grazing.*

Dr. Latham went into great detail explaining to his readers east of the Mississippi River that out on the western range the grass cured standing. In the humid East, hay had to be carefully dried and stored under cover to prevent spoilage.

Cattlemen from the woodland and coastal areas of Texas were familiar with winter grazing. The immediate ancestors of many of these cattlemen had practiced livestock winter grazing as they moved with their families across the piney woods and cane breaks of the Southeastern United States during the late 18th and early 19th centuries.

In the first section of the winter grazing booklet, Dr. Latham included letters he had received from knowledgeable individuals in response to inquiries on grazing conditions. These respondents included other surgeons, cavalry officers, bankers, ranchers, and freighters.

Among the most forceful letters were those written by Alexander Majors and John W. Iliff. Alex Majors was a Kentuckian and a member of the famous freighting firm, Russell, Majors, and Waddell. The firm developed the Pony Express in 1860. Writing from Soda Springs, Utah, May 1, 1869,

Authors are range scientists of the USDA, Agricultural Research Service, Univ. of Nevada, Reno.

Majors informed Dr. Latham that he had been grazing work cattle (oxen) on the plains and in the mountains for 20 years. During that time he had never less than 500 head to winter and at times as many as 15,000. He maintained that winter losses of cattle on the trans-Missouri ranges were less than those experienced in Missouri and Arkansas where cattle were wintered with hay, corn, and provided shelter.

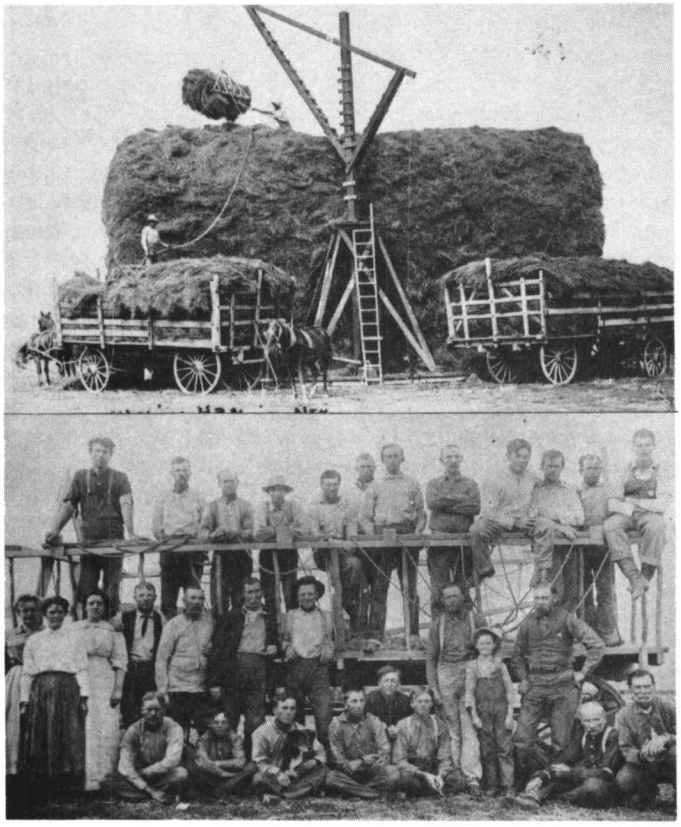


Fig. 1. *The necessity to grow and conserve forage as hay to provide winter rations for cattle required (a) the development of equipment, wagons, derricks, forks, etc. for haying and (b) large seasonal haying crews. (Figure 1a courtesy Northeastern Nevada Museum, Elko, Nev.; figure 1b from the Norris Myers collection, Adin, Calif.).*

John W. Iliff was born in Ohio in 1831 and came to Colorado during the Gold Rush in 1859. He pyramided a $750 stake from his father into a 1.5 million dollar ranching empire by 1878, the year of his death. Replying to Dr. Latham from Cheyenne, Wyo., Territory on August 21, 1869, Iliff reported that he considered the summer-cured grass on the plains superior to hay. His cattle often went into the winter in poor condition and came out in the spring as fine beef.

Dr. Latham described the geography and climate of much of the new northwest range area. He pointed out the abundance of stocker cattle available in Texas at cheap prices. The Latham booklet was probably read by such Texas ranchers as John Sparks, who was eager to drive cattle to the new ranges, and by eastern U.S. and European capitalists who hoped to profit from the cattle boom while they rubbed shoulders with the wild, young cowboys—knights of the plains.

Dr. Latham was born in Vermont in 1832. He graduated from Iowa College of Physicians and Surgeons in 1858 and became a contract surgeon for the Union Army during the Civil War. After serving at several military posts in Wyoming and Colorado, he resigned from the military and became a member of the medical staff of the Union Pacific Railroad. He was a one-man Chamber of Commerce for the Laramie Plains and a great booster for Wyoming. He was sent to Washington, D.C., in 1868 to lobby for creating the territory of Wyoming. The doctor became so convinced of the potential of the range livestock industry that he quit practicing medicine and formed a ranching company.

In 1871 Dr. Latham was a member of the committee which drafted the constitution and bylaws for the Stockgrazing Association, predecessor of the Wyoming Stock Growers Association. He registered his brand, an arrow on the left shoulder, in Book 1, Marks and Brands of Albany County.

Apparently, Dr. Latham was a better publicist than businessman because his ranch company failed in 1873 during a national depression and he left for Japan and a teaching position at the Imperial College.

The Winter of 1886 and 1887

Following Dr. Latham's prophecy, the range livestock industry boomed and the new ranges became fully stocked. Because of drought and overstocking, however, the range animals approached the winter of 1886 and 1887 in very poor condition. If such a summer had been followed by the best of winters, cattle probably would still have suffered; but instead of the best winter came one of the worst with snow, cold, and wind. Many of the animals were new to the ranges on which they were to be wintered, being recent arrivals from Texas.

Charlie Russell and Jesse Phelps were looking after 5,000 head of Kaufman and Stadler cattle during the winter of 1886 and 1887. Louis Kaufman wrote Phelps a letter requesting information on how the cattle were surviving. This inspired the famous 2 by 4-inch drawing by Charles Russell, "Waiting for the Chinook." The drawing showed a starved-looking steer, standing humped over in the snow, about ready to keel over, while hungry coyotes waited impatiently for the meal that was soon to be theirs.

Russell and Phelps sent the drawing to their bosses without any explanation. When the watercolor was received in Kaufman and Stadler's office in Helena, Mont., it caused considerable excitement. Someone, probably Kaufman, added the subtitle "The Last of 5,000." The drawing became the symbol of the end of the open ranging of livestock on the Northern Plains.

The extent of the losses of livestock from the winter of 1886 and 1887 was difficult to establish. Many ranchers did not know how many cattle they owned and many book counts were greatly inflated to attract investors. Some ranchers lost nearly all their herds, especially if the animals were recent arrivals from Texas and were wintering on poor range conditions in Wyoming.

Old-timers hardened to losses of range operations were in a state of absolute panic in the spring of 1887. Bright, young men who had flocked to the new ranges of the Northwest from halls of ivy or English drawing rooms for the chance of fortune and associations with wild freedom in the form of the Texas cowboy were revolted by the sights on the range. A fascinating business had suddenly become distasteful. Many left, and of those who remained the common pledge was to

never again be responsible for a range animal that could not be adequately fed or sheltered.

The winter of 1886 and 1887 should not have been a great surprise to old-time ranchers. Remember how Alex Majors wrote to Dr. Latham from Soda Springs, Utah, May 1, 1869, with his glowing report of wintering cattle on the range. But just a decade before, Major's firm had tried to winter 3,500 steers in Ruby Valley, Nev. These were beeves Majors had contracted to supply federal troops who were stationed in Utah to suppress the Mormon rebellion. A heavy snow fell in November 1858 and 40 days later only 200 steers survived.

The Winter of 1889 and 1890

The winter of 1886 and 1887 had been fairly mild west of the Rocky Mountains. Many Intermountain ranchers such as Johh Sparks still had ranching interests in Wyoming and other ranges east of the Continental Divide, so they were well aware of what the consequences could be of depending solely on winter grazing. Despite the warning of the winter of 1886 and 1887, few far western ranchers were prepared for the winter of 1889 and 1890. Cattle death losses in northern Nevada reached 95% on many large ranches.

Out of these twin disasters was born the culturing of hay to winter brood cows. The changed attitude of ranchers was expressed by William Byers at the 1898 meeting of the National Stock Growers Association: "Whenevever animals are under man's control, it is his duty to see that they do not suffer from any cause which he is able to remove."

Evolution of Haying

During the first half of the 20th century, the process of making hay for wintering brood cows evolved as an integral part of the range livestock industry.[1] For much of that time horses supplied the power for making hay but large amounts of seasonal labor were also required. Since World War II, haying has become largely mechanized, but the investment in capital required for this haying machinery has severely stressed the economic fabric of ranching. The labor and capital demands of hay production are responsible for the resurgence of winter grazing.

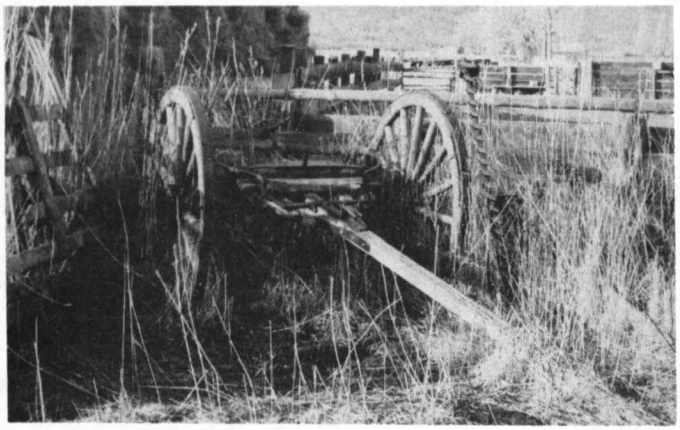


Fig. 2. *The historic and continued role of hay production and winter feeding is illustrated by this antique jig cart parked in a modern stockyard in Surprise Valley, Calif. The jig cart was used to stack hay with an incline ramp. The cart was fabricated in a ranch blacksmith shop from the running gear of a freight wagon. The equipment necessary to produce and stack the baled hay in the background represents an investment of over $100,000 dollars for the ranching operation.*

Points to Consider Concerning Winter Grazing

As we consider the historical perspective gained by the grand 19th century experiment in winter grazing, there are several points that should be stressed about proposed modern use of winter grazing.

Obviously, the concern for safety of the animals remains paramount. Ranchers must have sufficient hay reserves to protect the grazing animals and confidence that they can get the hay to the animals if the reserves are needed. Ranchers will have to raise and put up these hay reserves themselves and invest labor and capital, or risk purchasing and transporting hay under emergency conditions. Such purchases would be at seller's markets. If the incidence of emergencies is very infrequent, it may be economically desirable to plan on purchasing emergency hay and expect to pay inflated prices.

In the Intermountain Area stacked hay can be carried over for several years without undue losses in protein or energy providing the hay does not get wet. The portion of the stack that gets wet suffers a rapid loss in quality. Hay that is stored for more than one season will decline in carotene content. Carotene is the precursor of vitamin A and animals fed exclusively on old hay might suffer from vitamin A deficiency Supplements of old haystacks with freshly harvested hay with a good green color would be required.

If hay reserves could be carried over from year to year or possibly 3 years without undue losses of quality, labor requirements could be substantially reduced. If the ranch operator has a given amount of haying equipment and reduces the amount of hay produced because of reduced requirements for winter conserved forage because of winter grazing, the capital requirements per acre of hay harvested will be increased. Use of custom hay processors for the portions of the reserve of hay that must be renewed annually would substantially reduce capital requirements.

The forage reserves for winter grazing must be set aside from spring and summer growth. If insufficient summer forage is available in a grazing allotment, thoughts of winter grazing simply compound the problem. Range managers will have to determine how far into the early spring growth period it is feasible to graze wheatgrass species or devise grazing systems that permit periodic use into the spring growth period.

The use of winter grazing to control wolf plants in wheatgrass stands is correcting a problem that should have been prevented by proper grazing management. Care must be exercised to assure that the winter forage provides adequate nutrition especially for wintering pregnant heifers. The remoteness of many wheatgrass stands can contribute to problems in livestock management with winter grazing.

Grazing crop aftermath often substantially contributes to the forage base of many range livestock operations. The partial release of cropland from the requirement to produce hay by the substitution of winter grazing offers the potential for substantial additional flexibility in grazing management. Hay land converted to irrigated pasture could be used to

[1] See McCormick, J., J.A. Young, and W. Burkhardt. 1979. Making Hay. Rangelands. 1:203206.

partially finish yearlings or otherwise enhance operation.

Winter grazing is potentially not limited to wheatgrass seedings. Plant communities growing on non-arable situations such as basin wildrye *(Elymus cinereus)* communities on saline/alkaline soils can be used to winter dry cows.[2] This type of use can provide beneficial to the plant community as well as reducing hay requirements.

Winter grazing will not be a cure-all to the economic problems of ranching, but it offers the potential for additional flexibility in making management decisions. Evaluation of winter grazing in terms of the total ranch economic and biological situation is important.

[2]See Lesperance, A.L., J.A. Young, R.E. Eckert, Jr., and Raymond A. Evans. 1978. Great Basin wildrye. Rangeman's J. 5:125-127.

Note on Winter Grazing

Despite the fact that the Union Pacific Railroad distributed thousands of copies of Dr. Latham's booklet, apparently only a dozen copies of the original edition survived and only perhaps one copy is in a private collection. The booklet was reprinted by the Old West Publishing Company of Denver, Colo., in 1962 with an excellent introduction and appendix prepared by Jeff C. Dykes.

The Grazing Lands Forum: What It Is and Is Not

Evert K. Byington

The Grazing Lands Forum (GLF) is an organization of representatives from existing organizations interested in various aspects of grazing land stewardship. It hopes to focus interest on the use of our grazing lands by providing a forum for those who wish to engage in a factual dialogue on the future of these lands and to share the results of this dialogue with the public. GLF is not a formal organization. At present it is an educationally oriented ad hoc group working toward creating a formal nonlobbying, nonprofit organization by the end of 1984.

This article explains some of the what, where, why, how, when, and who of the GLF.

What Will the Grazing Lands Forum Do?

The mission of the GLF will be to improve management of grazing lands through programs to increase knowledge, understanding, and awareness. This will be done by sponsoring an open forum to improve communications and understanding among all those interest groups active in grazing lands use. Improved communications should help member organizations in the following activities:

1. Identify, describe, and stimulate factual analysis of the complex issues and options affecting grazing lands.
2. Encourage the development, maintenance, and use of a standardized, quantitative national grazing-lands-information base to support informed decision making.
3. Develop and implement educational strategies and projects to increase public awareness and appreciation of grazing lands—particularly in cooperation with other organizations having active programs related to grazing lands use.

Thus the GLF will concentrate on promoting the assembly, processing, packaging, and dissemination of factual information on the nature, extent, and use of all the nation's grazing land.

The author is a range scientist with Winrock International. Peter Jackson, Executive Vice-President of the Society for Range Management, is one of the founding members of the Grazing Lands Forum.

Where Are the Grazing Lands the Grazing Lands Forum Will Address?

The GLF will focus on those lands in the United States that provide forages for livestock and wildlife grazing. These include range, pasture, and forest lands, plus lands that provide harvested forages essential to the use of grazing lands, and croplands that are periodically grazed. Since economic, social, and environmental factors affecting grazing lands frequently cross national borders, the GLF will encourage participation by grazing lands organizations in other countries, particularly in North America.

Why a National Focus on Grazing Lands?

Over 800 million acres of the 50 states are being grazed by livestock—that's one acre in every three! In addition, there are hundreds of millions of acres that could be used for livestock grazing should the need arise. In 1978, the farmgate value of ruminant livestock was $51 billion or 40% of the nation's agricultural output. But livestock products are just one of the benefits that come to us from our pasture and rangelands. These lands provide a large part of our wildlife habitat, recreational opportunities, forest products, and water and air sheds; and they are a colorful part of our heritage.

Despite this vast contribution, Americans seldom think of our grazing lands as one of our great natural resources. Why is the general population so poorly informed about the value of these lands? Unfortunately, much of the fault is with us, the ones who care the most. We are not doing an adequate job of public education.

In this increasingly complex world, there is a tendency to become specialized—academically, geographically, and by user groups. (1) Academic and geographic specialization have given us two major grazing land types: *pasture* (per-

manent, temporary, improved, unimproved, cool-season, warm-sason, grass, legume, and all sorts of mixtures) and *range* (annual, transitory, forest, "conditional", i.e. poor, fair, good, and excellent, and "ecosystem", e.g. sagebrush, short grass prairie, Ponderosa pine, ad infinitum). (2) User group specialization has given us cattlemen, sheepmen, dairy producers, horsemen, wildlifers (hunters and nonhunters), recreationalists (dispersed and nondispersed, vehicle and nonvehicle), foresters, miners and drillers, conservationists, protectionists, government land managers, and private land owners.

The competition between and within user groups and geographical interests has diffused our vision of the nation's grazing lands resource. Instead of working together, we frequently concentrate on local special interests. As a result, existing research, educational, technical, planning policy, and management programs are not fully complementary to the goals of conserving, developing, and using grazing land resources to meet the needs of the people. A major factor limiting grazing lands conservation, development, and use is the public's lack of knowledge to consistently make informed decisions, particularly where land-use conflicts exist. Furthermore, this condition is not changing rapidly enough because existing mechanisms for assembling and delivering grazing lands information to the public are not adequate. There is a real need to improve this process.

In an era of shrinking resources for education, research, and land management and improvements, we are seeing more and more competition for these resources and the process of allocating these scarce resources becoming more political. The highly fragmented structure of the various grazing lands interest groups is making it difficult for us to play an effective role in the political process that is affecting the future of our grazing lands. We need to decide what our common goals are, get organized, and work toward these goals.

Decision making by the political process is complex and there are many ways to participate in it. The allocation of limited resources always involves a high level of emotion because most political decisions result in winners and losers. Fortunately, in the process of selecting between options for the future use of our grazing lands, we have a substantial body of factual (social, economic, environmental, and technological) information that can be used to help us keep our emotions in proper perspective.

The challenge before us is to make this body of information more useable and accessible to the public and their political representatives. This will assist them in selecting national policies that will help to ensure that our grazing lands are recognized as national resource of vast potential, and that this potential must be developed so that the needs of all grazing land users are realistically balanced while maintaining our nation's fundamental commitment to conservation. To meet this challenge of providing factual educational programs to the public, we in "the grazing lands family" must get our facts in order and learn to live together on a less emotional basis so we can work more efficiently on common goals.

How Will the Grazing Lands Forum Operate?

The GLF will be an organization of organizations which already have active programs focusing on some aspect of grazing lands. The GLF will be governed by a board of directors composed of representatives selected by the member organizations. Current draft bylaws call for three membership classes: core, advisory, and sustaining.

In general, core membership will be open to those national (in some cases, regional) nonprofit organizations that have an active interest in some aspect of grazing lands use. The intent is to have the full spectrum of interest groups represented, ranging from production agriculture to scientific and environmental viewpoints. Each core member will have one vote on the GLF board.

Advisory membership will be extended by the GLF board to organizations that do not meet the requirements for core membership but that can provide technical information essential to the accomplishment of the GLF mission. For example, selected governmental agencies, universities, private businesses, and others with grazing land programs would be asked to send representatives to participate in board discussions. Advisory membership would not have voting rights.

Sustaining memberships would be open to individuals, commercial enterprises, and other organizations not qualifying as core or advisory members. As of this time, sustaining members will not be directly represented on the board.

The day-to-day administration of the GLF will be performed by an executive committee elected from the board of directors. Educational and other activities will be carried out by committees appointed by the executive, with the board's approval. Each committee member may be selected from the general membership of any of the member organizations.

The GLF is intended to function as a facilitator to aid others to more efficiently use their capabilities through improved communications. The GLF would undertake research, education, or other projects on its own only if no one else were willing to do so.

When Will the Grazing Lands Forum Become Operational, and Who is Involved?

The current effort to establish a national organization with a comprehensive view of grazing lands started in 1980. In November of that year, the Extension-Industry Beef Resources Committee recommended that extension take the lead in increasing public understanding in the role of grazing lands. Specific recommendations included holding meetings to educate the public through an informal plan called the "Grazing Lands and People Project"; and the creation of a national coordinating group tentatively called the "Grazing Lands Council".

Further momentum came in June 1981 when the International Grassland Congress passed a resolution to encourage the formation of a "Grazing Land Coordinating Council". An informal ad hoc organization, the Grazing Lands Roundtable, was formed in Washington, D.C., and had representatives from 14 organizations. In July 1982, a National Leaders Conference on "Grazing Lands and People" was held in Denver, Colorado, as part of the Grazing Lands and People Project.

Out of the Denver meeting came a decision to use the Grazing Lands Roundtable as a vehicle to initiate efforts to establish a formal national grazing lands coordinating organization. Members of the Roundtable and others who have

(continued on page 212)

Grazing Lands Forum (cont'd)

been involved in the development of the GLF met at Winrock International in June 1983. They reaffirmed the need for such an organization but felt that participation should be broadened so that all aspects of grazing lands use would be fully considered and that greater emphasis would be placed on communications rather than on coordination. At this meeting the name, Grazing Lands Forum, was selected.

Currently, the GLF is an ad hoc group of individuals and organizations, sufficiently interested in the concept, voluntarily working to guide the GLF toward incorporation. *Participation in this group is open to anyone who is interested in becoming involved.* A five-member executive committee was appointed in 1983: Chairman, Ron Michieli, National Cattlemen's Association and the Public Lands Council; Secretary, Evert Byington, Winrock International; Peter Jackson, Society for Range Management; Dan Merkel, USDA/Extension Service; and Walter Wedin, American Forage and Grasslands Council. The group is now in the process of developing bylaws, with aims toward incorporation by late December 1984.

Two of the major tasks before the executive committee and those people serving on the other committees (promotion and public relations, organizations and membership, and activities) were: (1) to develop the bylaws, and (2) to expand the range of organizations participating in the establishment of the Grazing Lands Forum. Considerable progress has been made to accomplish both of these tasks. Thus far about 60 people have participated in one or both of the two meetings held to address the creation of GLF. In addition, another 100 people are on the mailing list to receive minutes, draft bylaws, and other documents associated with the Forum. Many people have made valuable inputs into developing the bylaws and informing others about GLF. We are in the process of preparing the second draft of bylaws and stepping up efforts to expand awareness about GLF.

Anyone wishing to be involved in the activities or to have their name placed on the mailing list are asked to contact:

Evert Byington
Winrock International
Route 3
Morrilton, Arkansas 72110

Texas Section Youth Range Workshop

In June the Texas Section conducted its 30th Annual Youth Range Workshop near Junction at the Texas Tech University Center. Through 30 years, 939 Texas youth selected from 4-H Clubs and FFA Chapters throughout Texas have attended the workshop. The workshop is conducted to recognize outstanding Texas youth involved in range programs, provide an opportunity for further development of leadership skills, and train our youth in range management.

The 1984 Workshop was attended by 10 girls and 26 boys, who received advanced training both in the classroom and field. The educational experience covered such topics as range ecosystems, plant identification, range management practices, range-wildlife interrelationships, range animal nutrition, noxious plant control, watershed management, ranch planning, leadership, and 4-H and FFA range judging contents. The youth were sponsored financially by local Conservation Districts, 4-H Clubs, Farm Bureaus, banks and parents.

Youth participants were involved in many activities during the weeklong workshop including a range visit to the Woodard-Alamo Ranch near Junction, a tour of the Kerr Wildlife Management area, a strenuous inhouse lecture series, plant collecting, field work on range contests and watershed management, recreation, and the Range Olympics. Youth competed each day to present a live radio program over Radio Station KMBL in Junction. Impromptu talks on the daily workshop activities provided valuable experience in communications for the youth and an educational value to the listening public. Evening sessions were highlighted by a leadership program directed by Marshal Stabel on individual needs, leadership styles, and being a successful leader. A morning thought for the day and evening vespers provided a spiritual aspect to the workshop emphasizing man's stewardship of the rangeland resource.

As in past years, each youth kept a workshop notebook and completed a collection of important range plants. These were used to evaluate the youth on their performance for awarding blue, red, and white ribbons. Based on leadership exercised as Ramrods, ability to work with others, and other traits, Honor Ramrods and a Trail Boss were selected by the youth and directors. Honor Ramrods selected included Ted White (San Angelo), David Portalatin (Abilene), Linda Weatherford (Seguin), Shannon Laramore (Marble Falls), and Cuatro Patterson (Leakey). Roger Hodge (Del Rio) was selected as the Trail Boss for the 1984 Youth Range Workshop.

On the final afternoon, graduation certificates were presented to all youth participants by Texas Section President Russ Pettit. Three youth participants were selected as potential delegates to the High School Student Forum at the Annual Meeting of the Society of Range Management at Salt Lake City, Utah. These included Rosa Telles (Eagle Pass), Susan Miller (Harwood), and Ted White (San Angelo). Cuatro Patterson was selected as the alternate delegate to the Forum and the delegate to the Texas Section Annual Meeting in Corpus Christi this December.

Anatomy of a Discipline

Compiled by A.A. Beetle

The successful formation of an international Society, publication of a journal, the size of school enrollments, the attendance at semiannual international, and frequent local, meetings, as well as the volume of research being undertaken all indicate that a new scientific field, range management, has emerged from the shadows of agronomy, wildlife, forestry, plant ecology, animal nutrition, arid land agriculture, and other related, and overlapping subject areas.

Because we are close in history to this event, because a large number of those responsible are still alive, and because thorough records have been kept, it is possible to document this event in a manner which has seldom been possible for similar events in the past. No one person or group, and no one geographic area other than the whole of the western United States, has been primarily responsible. It has, rather, been a widespread, gradual but steady growth. Consequently the recognition goes to many.

As in any good evolutionary development, range mangement did not spring up as something new but evolved. The following lists are attempts to show from whence came the materials and who were the principals in the early years of the Society. Not only are the men ranked in their categories, but also on the number of references of them in the *Journal*, the first 19 volumes of which reflect the first 20 years of the Society.

Where Did They Come From?

In a country where people are mobile, the place of origin seems to lose significance. The range men came, literally, from everywhere. Perhaps largely by accident the following states happened to make the greatest contributions:

1. KANSAS: C.W. Cook, J.R. Bentley, G.A. Rogler, D.R. Cornelius, and F.W. Albertson.
2. ILLINOIS: R.S. Campbell, A.L. Hafenrichter, C.K. Pearse, D.R. Cable, and J.L. Retzer.
3. COLORADO: L.A. Stoddart, D.F. Hervey, M.S. Morris, F.H. Kennedy, and J.F. Arnold.
4. IDAHO: H.F. Heady, J.F. Pechanec, A.C. Hull, L.E. Harris, and J.P. Blaisdell.
5. NEBRASKA: A.W. Sampson, D.R. Costello, K.L. Anderson, R.C. Chapline, and D.H. Gates.
6. IOWA: J.E. Weaver, E.J. Dyksterhuis, G.D. Pickford, R.M. Hurd, and R.S. Rummell.
7. CANADA: E.W. Tisdale, R.M. Love, D.G. Wilson, A.L. Brown, and R.T. Coupland.
8. MISSOURI: H.H. Biswell, M.W. Talbot, R.E. Eckert, W.G. McCully, and R.L. Lang.
9. UTAH: B.W. Allred, V.A. Young, A.D. Smith, L.K. Halls, and O. Julander.
10. CALIFORNIA: R.R. Humphrey, H.C. Reynolds, E.H. Reid, W.F. Howard, and L.J. Berry.
11. WYOMING: E.J. Woolfolk, F. Rauzi, C.L. Forsling, D. Bohmont, and M. May.
12. MONTANA: F.G. Renner, D.A. Savage, G.W. Payne, W.C. Robocker, and E.B. Stanley.
13. ARIZONA: E.H. McIlvain, C. Wasser, K.A. Wagnon, S.C. Martin, and W.J. McGinnies.
14. MINNESOTA: A.M. Schultz, H.C. Hanson, H.A. Paulsen, R.W. Harris, and W.R. Kneebone.
15. Texas: T.W. Box, C.A. Rechenthin, D. Huss, V.L. Duvall, and H.M. Laude.

Where Did They Learn?

The number of schools contributing degrees is about as diverse as the places of origin. Many range men have degrees from two or more schools. Schools with a strong influence seem to be:

1. FT. HAYS (KANSAS): C.W. Cook, F.W. Albertson, J.L. Launchbaugh, G. W. Tomanek, and F.E. Kinsinger.
2. UTAH STATE: C.W. Cook, B.W. Allred, V.A. Young, A.D. Smith, and A.C. Hull.
3. TEXAS A.&M.: C.W. Cook, D.F. Hervey, D.W. Hedrick, L.K. Halls, and G.W. Thomas.
4. U. OF CHICAGO (ILL.): R.S. Campbell, D.F. Costello, R.A. Darrow, W.P. Cottam, and L.F. Graber.
5. COLORADO STATE: L.A. Stoddart, D.F. Hervey, E.H. McIlvain, L.K. Halls, and M.S. Morris.
6. U. OF NEBRASKA: L.A. Stoddart, H.F. Heady, A.W. Sampson, J.E. Weaver, and H.H. Biswell
7. U. OF IDAHO: H.F. Heady, J.F. Pechanec, D.N. Hyder, F.H. Kennedy, and G.J. Chohlis.
8. U. OF CALIFORNIA: A.A. Beetle, K.W. Barker, D.F. Hervey, G.M. Van Dyne, A.D. Smith, and D.W. Hedrick.
9. U. OF MINNESOTA: J.E. Weaver, E.W. Tisdale, R.R. Humphrey, V.A. Young, and G.A. Rogler.
10. U. OF WYOMING: A.A. Beetle, R.L. Lang, O.K. Barnes, D.F. Burzlaff, and F. Rauzi.
11. KANSAS STATE: J.R. Bentley, G.A. Rogler, D.R. Cornelius, W.T. White, and K.L. Anderson
12. OREGON STATE: F.G. Renner, D.N. Hyder, G.J. Chochlis, R.E. Eckert, and W.C. Weir.
13. U. OF ARIZONA: R.A. Darrow, J.T. Cassady, G.E. Glendenning, C.H. Wasser, and S.C. Martin.
14. MONTANA STATE: D.A. Savage, H.G. Fisser, M.J. Reed, and D.A. Jameson.
15. WASHINGTON STATE: D.W. Hedrick, J.G. Clouston, C.E. Poulton, O.A. Leonard, and D.L. Goodwin.
16. S. DAKOTA STATE: G.M. Van Dyne.

I. Teachers

1. Cook, C.W.-Utah State U.
2. Stoddart, L.A.-Utah State U.
3. Heady, H.F.-U. Calif.
4. Sampson, A.W.-U. Calif.
5. Beetle, A.A.-U. Wyo.
6. Weaver, J.E.-U. Nebr.
7. Tisdale, E.W.-U. Idaho
8. Biswell, H.H.-U. Calif.
9. Humphrey, R.R.-U. Ariz.
10. Love, R.M.-U. Calif.
11. Hervey, D.F.-U. Colo.
12. Young, V.A.-Texas A&M
13. Smith, A.D.-Utah St. U.
14. Robertson, J.H.-U. Nevada
15. Hedrick, D.W.-Oregon St.
16. Whitman, W.C.-N. Dak. St. Col.

Teachers (continued)
17. Morris, M.S.-U. Montana
18. Harris, L.E.-Utah St. U.
19. Albertson, F.W.-Ft. Hays, Kan.
20. Shultz, A.M.-U. Calif.
21. Wasser, C.H.-U. Colo.
22. Thomas, G.W.-Texas Tech.
23. Poulton, C.E.-Oregon St.
24. Box, T.W.-Texas Tech.
25. Harlan, J.A.-Okla. St. U.
26. Launchbaugh, J.L.-Ft. Hays
27. Harris, G.A.-Wash. State U.
28. Tomanek, G.W.-Ft. Hays.
29. Lang, R.L.-U. Wvo.
30. Payne, G.F. Montana St.

II. Forest Service
1. Campbell, R.S.
2. Pechanec, J.F.
3. Parker, K.W.
4. Woolfolk, E.J.
5. Talbot, M.W.
6. Costello, D.E.
7. Darrow, R.A.
8. Halls, L.K.
9. Kennedy, F.H.
10. Reid, E.H.
11. Ellison, L.

III. Soil Conservation Service
1. Allred, B.W.
2. Renner, F.G.
3. Dyksterhuis, E.J.
4. Albee, L.R.
5. Anderson, E.W.
6. Freeman, J.D.

IV. Agricultural Research Service
1. Hull, A.C., Jr.
2. McIlvain, E.H.
3. Hafenrichter, A.L.
4. Rogler, G.A.
5. Branson, F.A.
6. Burton, G.W.
7. Rauzi, F.
8. Cornelius, D.

V. Deceased
1. White, W.T. (1891-1956)
2. Savage, D.A. (1901-1954)
3. Albertson, F.W. (1892-1961)
4. Glendenning, G.E. (1912-1963)
5. Hanson, H.C. (1891-1962)
6. Ellison, L. (1908-1958)
7. Clements, F.E. (1874-1945)
8. Clarke, S.E. (1880-1963)
9. Gilbert, H.R. (1897-1952)
10. Dayton, W.A. (1885-1958)

VI. Bureau of Land Management
1. Larson, F.
2. Kinsinger, F.E.
3. Wilson, D.G.
4. Noble, M.

VII. Ranchers
1. Atkins, A.P.
2. Fulton, D.A.
3. Weaver, G.
4. Orcutt, J.B.
5. Wolff, O.J.

VIII. Businesses Other Than Ranching
1. Chochlis, G.J.
2. Clawson, M.
3. Grumbles, J.B.
4. Williams, L.

IX. Outside the U.S.
1. Campbell, J.A.
2. Campbell, J.B.
3. Gonzales, M.
4. Davies
5. Levy

X. Extension
1. Jackman, F.R.
2. Barnes, O.K.
3. Walker, A.H.
4. Bedell, T.
5. Jefferies, N.
6. Hyde, R.
7. Nicholls, J.

XI. Statisticians
1. Snedecor
2. Cochran
3. Turkey
4. Stein
5. Duncan

Cooperative Education

Many employers in the Western United States work with Cal Poly to help meet their temporary employee needs with outstanding students every year. This employer-university union is brought about via Cal Poly's Cooperative Education work-experience program. Cal Poly students are selected by sponsoring companies for three- to six-month periods of paid, full-time, career-related work alternating with periods of on-campus study.

Nearly half of the students taking advantage of this program are hired after graduation by their co-op employers, and go on to distinguish themselves by their high productivity and fidelity to their employers.

For more information write or call: Cooperative Education Program, California Polytechnic State University, San Luis Obispo, CA 93407.

Riparian Conference

An interagency North American riparian conference will be hosted as part of the University of Arizona's Centennial Program in Tucson, April 16-18, 1985. Sponsored by agencies from the United States, Mexico, and Canada, the conference is entitled "Riparian Ecosystems and Their Management: Reconciling Conflicting Uses." Abstracts from which papers will be selected for the conference are due October 31. Symposium proceedings will be published by the Rocky Mountain Forest and Range Experiment Station. For further information write: R. Roy Johnson, #125 Biological Sciences East, University of Arizona, Tucson, AZ 85721.

Univ. Idaho College of Forestry, Wildlife, and Range Sciences Celebrates 75th

Special events, including a seminar series, alumni activities, and the publication of a history, are planned to commemorate the 75th anniversary of the University of Idaho College of Forestry, Wildlife and Range Sciences.

Founded in 1909 as a Department of Forestry within the College of Agriculture, the college began with 1 professor—department head Charles Houston 3 courses, and 11 students.

Now, over 60 faculty members offer 100-plus courses in over 75 renewable natural resources areas to more than 500 undergraduate and graduate students from throughout the country and the world. The college occupies a modern three-story building of some 91,000 square feet and 170 classrooms, laboratories, and offices, as well as a computer terminal room.

Utah—Where the Society for Range Management Was Organized

James L. Jacobs

Utah was chosen as the site for the first meeting of the Society for Range Management, which was organized with Joseph Pechanec as the first president, at the Newhouse Hotel in Salt Lake City in January, 1948. The 192 charter members who were in attendance brought forth a lusty, vibrant organization that has grown and prospered over the years. It was born after a gestation period of many years, during which replies to a questionnaire showed that 495 of the 505 rangemen questioned favored formation of such an organization. It was named the American Society of Range Management and became the Society for Range Management in 1970.

Utah was also chosen as the location for the 14th annual meeting of the Society, which was held in the same Newhouse Hotel in February, 1961. It was here the Range Conservation postage stamp was issued in connection with this meeting. Stamp Artist Rudolph Wendelin participated in the meeting and signed his autograph on hundreds of first day issued stamps and Society banquet programs which were decorated with the range conservation stamp. Several cowboy television celebrities provided entertainment, one of which was Sheb Woolley, who rode into the crowded hotel ballroom on the horse that Bill Hurst had led up the marble steps into the lobby of the hotel.

And now—the next annual meeting of the Society returns to Salt Lake City next February. This time we'll meet at the famous Hotel Utah. The old Newhouse was brought down by a demolition blast last year.

It is fitting that the Society's first meeting was in Utah, which has a rich background in livestock and grazing history. The economy of early Utah was based on the livestock industry, and it is still of major importance in the wealth and well-being of the state. Cattle and sheep continue to contribute much to the people, and the management of the ranges on which they graze is of great importance.

The livestock grazing history of Utah has some fascinating episodes. Some of the nuggets of Utah's grazing history are as follows:

• Miles Goodyear built Fort Buenaventura near the present city of Ogden prior to the time the Mormons first came to Utah in July, 1847. On one of the trips to Santa Fe he brought back livestock, which he grazed near his fort. He was not happy when the large number of Mormons settled near his fort, so he sold the fort and most of his livestock to Captain James Brown on November 25, 1847, for $1,950 in gold. Included in the sale were 75 cattle, 75 goats, 12 sheep, 6 horses, and a cat. This was the first sale of livestock in Utah.

Miles Goodyear went to California where horses were selling for from $2 to $4 per head. He purchased a band of horses in 1848 and trailed them 2,000 miles to Ft. Leavenworth, Kans., and St. Joseph, Mo. The horse market there turned bad, so instead of selling them as he intended, he wintered them on the Missouri River bottoms. Discovery of gold in California improved the demand for horses there, so next spring he drove the horses back to California, where he sold them at a good profit after trailing them 4,000 miles. He trailed the horses from Independence, Mo., to Sutters Fort, Calif., in 54 days.

• The first substantial amount of livestock that came to Utah was brought by the second company of Mormon pioneers who left Winter Quarters, 6 miles from Omaha, Neb., on July 4, 1847, with 556 wagons in the company. They brought with them 358 sheep, 887 cattle, 2,213 oxen, 35 hogs, 124 horses, and 716 chickens. The company was led by Parley P. Pratt, who organized the company into units for grazing and herding purposes. They encountered extreme difficulties on the trip to Salt Lake City, where they arrived on September 19, 1847.

• Brigham Young, President of the Mormon Church, took possession of Antelope Island in Great Salt Lake soon after the Utah pioneers arrived in Utah, to be used as a herd ground for the livestock owned by the church. Bryant Stringham, who was in charge of the island, insisted that every horse be corralled at least once each year. They were looked after, handled, and broken by a top crew of horsemen.

There were upwards of a thousand horses on the island, the finest horses in the West. The high point of the year was the horse roundup time. In 1860 President Brigham Young visited the island and brought all of his clerks and some other guests for a three-day outing. He invited some of the most noted horsemen in the territory to participate. They came mounted on the best horses to take part in the roundup. The show at roundup time was the occasion for a celebration. The hazing and racing large bunches of horses into the corral required skilled horsemanship. There the roping, branding, and treatment of the wild bunch required the assistance of expert horsemen and provided excitement to the visitors. There was also feasting, and music for the entertainment of the guests.

Antelope Island became overstocked with grazing animals, so Brigham Young sent large numbers of horses and cattle south to new range near the Sevier River. The Mormon

Bishop at Holden was put in charge of them. The area where they were grazed is still called the Church Hills, part of which is on the Fishlake National Forest.

• In 1855 Brigham Young called on a number of families to move their livestock out to new ranges, so the Bennion families moved their cattle to Rush Valley. The range in the south end of Rush Valley was considered to be of top quality, so it was loaded up with cattle, sheep, and horses. By 1875 this range was so badly depleted that cows were calving only every other year, and both cattle and sheep were being moved in the fall to winter in the lower valleys farther west. Hyrum Bennion reported that Rush Valley was considered to be the best range in Utah as they could stay in one place all the year round, but, by 1875 it was all "et out" and they had to move their cattle to Castle Valley.

• When the Mormon pioneers arrived in Utah, the forage for their livestock appeared to be almost inexhaustable. But the principles of good range management had not been learned by the settlers, and they abused the range. Grazing problems became acute. Elder Orson Hyde, one of the leaders of the church, gave the following report in the semi-annual general conference of the Mormon Church in Salt Lake City on October 7, 1865, 18 years after the first settlers arrived:

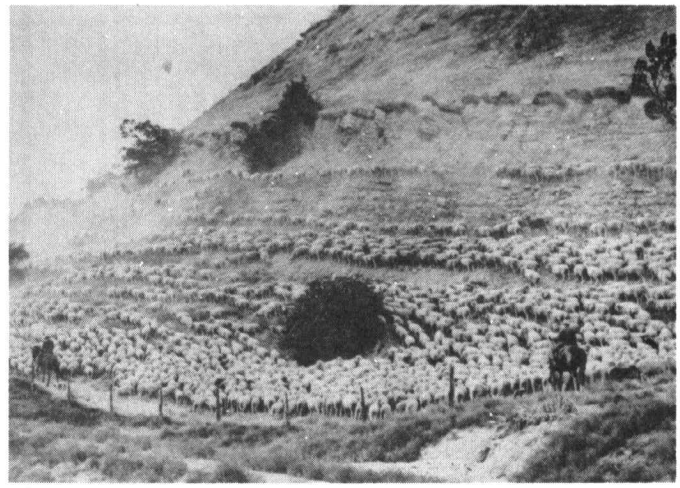
> I find the longer we live in these valleys that the range is becoming more and more destitute of grass; the grass is not only eaten up by the great amount of stock that feed upon it, but they tramp it out by the very roots, and where grass once grew luxuriantly, there is now nothing but the desert weed, and hardly a spear of grass is to be seen. Between here and the mouth of Emigration Kanyon, when our brethren, the pioneers first landed in '47, there was an abundance of grass over all those benches; they were covered with it like a meadow. There is now nothing but the desert weed, the sage, the rabbitbrush, and such like plants that make very poor feed for stock. Being cut short of our range in the way we have been, and accumulating as we are, we have nothing to feed them with in the winter and they perish. There is not profit in this . . . Hence in my labors I have exerted an influence, as far as I have been able, to cultivate less land in grain and secure to ourselves meadows that we might have our hay in the time and in the season thereof . . . . in the present condition of the range we cannot indulge in the hope of raising such large herds of stock as we have done heretofore; but we have to keep about what will serve up and take care of them well.

• Texas longhorn cattle were brought to Utah in sizeable numbers in the 1860's and 1870's. Some were marketed in Utah and others were wintered here en route to other markets. The movement of Texas cattle to Utah apparently started in 1866 when John Hamilton Morgan and a friend contracted to drive a herd of Texas longhorns from Missouri to Salt Lake City. They arrived on December 23, 1866, the first of thousands to come from Texas.

Brown's Hole in northeastern Utah was a favorite wintering spot for Texas cattle. In October, 1869, 2,200 Texas cattle were driven into the Hole to winter before going on to the California market.

In 1870 as many as 100,000 cattle were driven from Texas, about 8,000 of which came to Utah. George T. and William D. Reynolds drove 900 longhorns north to Cheyenne, then west to Salt Lake City. James Daugherty was a leading drover for two decades, moving from 1,000 to 4,000 cattle from Texas each year, many of which came to Utah.

The second Powell expedition exploring the Colorado River discovered on June 8, 1871, the temporary headquarters of the Harrell Brothers on the Green River. They were wintering 2,000 head of Texas longhorns on the trail to California. The Powell party traded some of their flour to these cattlemen for fresh beef.



Sheep trailing from summer range on their way to the desert for winter.

• The Deseret Livestock Company is an outstanding outfit which was organized in 1889 by a group of sheepmen who believed they could operate their grazing business best on a cooperative basis. None of the stockholders owned their grazing land, but they felt they should do so to insure proper management of their operations. They incorporated in 1891 with John H. Moss, president, James I. Atinson, vice president, and Orrin P. Hatch as secretary, and a group of directors. All of the officers but one worked for the company. There were ninety-five stockholders at the time of incorporation, and this grew to 250 in 1928, when the company had a national reputation as a good outfit. It has survived 95 years in the business.

The name 'Deseret' comes from the Book of Mormon and signifies industry. Early church influence was shown by the practice of the company to pay ten percent of the profits to the Mormon Church as tithing before the dividends were distributed to the stockholders.

In 42 years the company bought 235,740 acres of land in six counties and two states, Utah and Wyoming. Many of the stockholders filed on homesteads, and when they got title to the land, donated it to the company to enlarge its holdings and strengthen the company.

The operation was entirely with sheep until 1901, when the Echo Land and Livestock cattle outfit was purchased. Cattle were originally intended to supplement the sheep operation, but over the years cattle numbers increased so that they eventually became more important than sheep.

Sheep numbers peaked when 60,000 mature sheep were run. On some occasions when lambs were shipped, full trainloads of Deseret Livestock lambs were shipped to eastern markets. Cattle numbers ranged from 3,000 to 5,500 head, but peaked at 8,000 head.

Sheep were wintered on the desert range in Skull Valley and trailed to their summer range through the streets of Grantsville and Salt Lake City until arrangements were made to ship them from the North Salt Lake stockyards.

In the late 1940's Ken Garff, David Freed and David Robinson began buying out other stockholders. These men gained control of the company, which they operated successfully for many years. In 1974 Joseph Hotung purchased a large part of the company's land and livestock in Northeastern

Counting sheep permitted to graze on the Wasatch National Forest.

Utah. The Garff-Freed-Robinson partnership retained the Naponset Ranch with over 30,000 acres of land, winter permits for 2,500 cattle, and 26,000 acres of Heiner Canyon for summer grazing. In 1983 Hotung sold his holdings, which were renamed The Deseret Land and Livestock Company.

• John Albert "Al" Scorup was one of Utah's outstanding cattlemen who built a cattle empire in the wild, remote, inaccessible canyon country of San Juan County. Although he was reared in Salina, where he retained a cattle operation, he envisioned the possibilities for success raising cattle in San Juan.

In the early 1890's, Al, with his brother Jim, leased 300 cattle in Salina, trailed them 300 miles to the White Canyon country, and started in the cow business. They ran into many problems—shortage of water, competition from Texas cattlemen, and large herds of wild horses that ate up the feed and damaged the range. Al and Jim spent many days shooting horses. Lions and wolves killed calves. "Old Bigfoot" was a wolf that killed 150 calves one fall.

For years longhorn cattle had been running wild in a sixty-mile wilderness of dense junipers west of the town of Bluff, so inaccessible that a horse could not get through. Rounding up these cattle had been so difficult that the owners had abandoned them. The Bluff Pool that claimed ownership signed a contract in 1897 with Al Scorup to gather the wild cows. Al figured he could get the cattle out for five dollars a head, so he hired some tough Bluff boys and went to work. It was a tough job, roping wild steers, twisting tails, dehorning, yoking two animals together, and using every known trick to get the cattle out. By spring they had rounded up more than 2,000 head. Al deposited almost $10,000 in the bank at Durango, which the Scorup Brothers needed badly to operate on.

The Bluff Pool collapsed and the Scorup Brothers bought it out. They bought top grade bulls in Sanpete County and trailed them to White Canyon. By 1912 they had become a sizeable outfit, with thousands of their cattle ranging over tens of thousands of acres from Elk Ridge of the Blue Mountains to the junction of the San Juan and Colorado Rivers.

Hard times came in 1918 when Jim Scorup died and Al was left with 36 inches of snow covering the grass his cattle needed. No hay was available. By spring almost 2,000 head of Scorup's Indian Creek cattle were dead. Al paid a trapper $1.50 each to skin the dead carcasses, and he sold the hides for 28-cents a pound. But Al was able to roll with the punches and stay in the business.

In 1926 Al Scorup, Jacob Adams, and the Summervilles organized the Scorup-Sommerville Cattle Company with Al holding the bulk of the stock. A Forest Service grazing permit issued to this company in 1927 is said to be the largest permit ever issued in the United States. It was for 6,780 head of cattle.

The range for this outfit covered almost two million acres of land. Each year from 7,000 to 10,000 cattle ranged over the area.

Al Scorup continued riding horseback until he was 80 years old. In later life he always wore a white shirt, probably remembering the years when he did not own one. He is still remembered as a tough, shrewed, outstandingly successful cattleman. His crowning achievement was election to the Cowboy Hall of Fame in Oklahoma City, where his memory is honored by the elite of the cattle industry.

The above flashbacks in the history of range management in Utah provide the setting for the annual meeting of the Society for Range Management in Salt Lake City next February. All rangemen are invited to get together at this meeting to consider past experiences, rub shoulders, and renew acquaintances with old friends, and listen to the experts give reports of new developments in the field of range management.

We look forward to seeing you all in Salt Lake City.

Sources

Miles Goodyear, First Citizen of Utah, by Charles Kelley and Maurice L. Howe. 1937.

Journal of Discourses, Church of Jesus Christ of Latter Day Saints. 1865. p. 149-150.

Autobiography of Parley P. Pratt. 1888. Pub. by Law, King and Law.

Growth of a Ranch. Gene Peterson. 1981.

East of Antelope Island. Daughters of Utah Pioneers Pub. 1948.

A Pioneer Cattle Venture of the Bennion Family. By Glynn Bennion. Utah Historical Quarterly Vol. 34 No. 4.

Al Scorup: Cattleman of the Canyons by Neal Lambert. Utah Historical Quarterly Vol. 32 No. 3.

Longhorns Come to Utah by Don D. Walker. Utah Historical Quarterly Vol. XXX No. 2.

Current Literature of Range Management

This section has the objective of alerting SRM members and other readers of *Rangelands* to the availability of new, useful literature being published on applied range management. Readers are requested to suggest literature items—and preferably also contribute single copies—for including in this section in subsequent issues. Personal copies should be requested from the respective publisher or senior author (address shown in parentheses for each citation).

Comparative Successional Roles of Trembling Aspen and Lodgepole Pine in the Southern Rocky Mountains; by Albert J. Parker and Kathleen C. Parker; 1983; Great Basin Nat. 43(3):447-455. (Dept. Geogr., Univ. Ga., Athens, Ga. 30602) Compared the strategies of these two species for occupying disturbed sites.

Costs and Returns of Alternative Calf Wintering and Grazing Programs in Wyoming; by W. Gordon Kearl and Joe A. Ross; 1983; Wyo. Agric. Expt. Sta. Res. J. 187; 60 p. (Bulletin Room, Agric. Expt. Sta., Laramie, Wyo. 82071) Related feed requirements and average daily gains for different feeding regimes common in Wyoming with subsequent summer gains and calculated most profitable programs.

Deer and Elk Management in the Southwest; by Kieth E. Severson and Alvin L. Medina; 1983; J. Range Mgt. Mono. 2. (Originally published by Soc. for Range Mgt., 2760 W. Fifth Ave., Denver, Colo. 80204; reprinted and made available by USDA, Rocky Mtn. For. & Range Expt. Sta., 240 W. Prospect St., Fort Collins, Colo. 80521) Summarizes information on habitat, habitat requirements, management direction, and research needs with special emphasis on the effects of timber and livestock management and prescribed fire and wild fire.

Deer Census Techniques; by Milo J. Shult and Bill Armstrong; 1984; Texas Parks & Wildl. Dept. Rep. 700-83; 6 p. (Texas Parks & Wildl. Dept., 4200 Smith School Road, Austin, Tex. 78744) Discusses and explains three types of census techniques available for use by private landowners.

Ecology and Management of Lotebush on the Texas Rolling Plains; by M.A. Foster, C.J. Scifres, and P.W. Jacoby, Jr.; 1984. Texas Agric. Expt. Sta. Misc. Pub. 1550; 19 p. (Bulletin Room, Agric. Expt. Sta., College Station, Tex. 77843) A state-of-the-art review giving emphasis to the life history, growth habits, impacts on the ecosystem, and other facets of lotebush ecology; reviews control methods.

Economic Analysis of Selected Brush Management Practices for Eastern South Texas; by G.L. McBryde, J.R. Conner, and C.J. Scifres; 1984; Texas Agric. Expt. Sta. Bul. 1468; 14 p. (Bulletin Room, Agric. Expt. Sta., College Station, Tex. 77843) Provides updated analysis of economic responses on four brush types and a basis for evaluating and implementing profitable brush management.

Economic Feasibility of Brush Control in the Edwards Plateau; by R.E. Whitson, L.B. Merrill, H.T. Wiedemann, and C.A. Taylor, Jr.; 1984; Texas Agric. Expt. Sta. Misc. Pub. 1554; 9 p. (Bulletin Room, Agric. Expt. Sta., College Station, Tex. 77843) Determined productivity and income trends during the first 10 years following brush control by rootplowing, grubbing or aerial spraying; related results to future brush management decisions.

Compiled by John F. Vallentine, Professor of Range Science, Brigham Young University, Provo, Utah 84602

The Effects of Fasting and Refeeding on White-Tailed Deer; by Truman V. Hershberger (Ed.) and Charles T. Cushwa (Coord.); 1984; Penn. Agric. Expt. Sta. Bul. 846; 26 p. (Bulletin Room, Agric. Expt. Sta., University Park, Penn. 16802) Summarized efforts to evaluate the effects of supplemental feeding following winter starvation; compared findings with that reported for mule deer in Colorado.

The Effect of Protein Supplement on Late Summer Gains of Stocker Cattle Grazed on Native Bluestem Range; by D.R. Gill, K.S. Lusby, and R.L. Ball; 1984; Okla. Agric. Expt. Sta. Misc. Pub. 116, p. 144-6. (Bulletin Room, Agric. Expt. Sta., Stillwater, Okla. 74074) Studied the benefits of sunflower cubes compared to the traditional soy-cottonseed cubes for yearling steers.

Evaluation of Plants Used for Stripmine Reclamation near Healy, Alaska; by Jay D. McKendrick, Charles L. Elliott, and Charles P. Boddy; 1984; Agroborealis 16(2):4-8. (Mailing Room, Agric. Expt. Sta., Fairbanks, Alaska 99701) Results in establishment of various grasses and forbs during six seeding years; provides tentative seeding and management recommendations.

Fertilizing Wyoming Hay Meadows: How Much Nitrogen Can You Afford; by James J. Jacob, David T. Taylor, Wesley J. Seamands, Ronald H. Delaney, and Dale J. Menkhaus; 1984; Wyo. Agric. Expt. Sta. Bul. 828; 16 p. (Bulletin Room, Coll. Agric., Univ. Wyo., Laramie, Wyo. 82071) Estimates response functions of native, improved grass, and grass-alfalfa meadows to nitrogen fertilization and illustrates a regression model for estimating the most profitable N application rate.

Forage Production and Crude Protein Percentages of Bermudagrass in Southern New Mexico; by G. Lugg and C.E. Watson; 1983; N. Mex. Agric. Expt. Sta. Res. Rep. 516; 5 p. (Bulletin Room, Agric. Expt. Sta., Las Cruces, N. Mex. 88003) This study compared eight bermudagrass lines under irrigation for forage production, crude protein, and general utility.

How to Manage Pheasants in the Southern High Plains of Texas; by F.S. Guthery, R.W. Whiteside, T.T. Taylor, and T. Shupe; 1984; Texas Tech Univ. Range and Wildl. Mgt. Note 3; 6 p. (Dept. Range and Wildl. Mgt., Texas Tech Univ., Lubbock, Texas 69409) A synthesis of practical pheasant management techniques.

Influence of Grazing with Cattle on Establishment of Forage in Burned Aspen Brushland; by R.D. Fitzgerald and A.W. Bailey; 1983; Proc. Intern. Grassland Cong. 14:564-566. (Univ. Alberta, Edmonton, Alta, Can. T5K 2C8) A study of the use of concentrated cattle grazing to suppress shrub sprouts while enhancing forage seedings on burned aspen sites.

A Modified Utilization Gauge for Western Range Grasses; by Earl F. Aldon and Richard E. Francis; 1984; USDA, For. Serv. Res. Note RM-438; 2 p. (USDA, Rocky Mtn. For. & Range Expt. Sta., 240 West Prospect St., Fort Collins, Colo. 80521) An explanation of a modified utilization gauge for use on Southwest semiarid rangeland sites; based on height reduction-percent utilization relationships in selected grass species.

Native Alaskan Pumpelly Bromegrass: Characteristics and Potential for Use; by L.J. Klebesadel; 1984; Agroborealis 16(2):9-14. (Mailing Room, Agric. Expt. Sta., Fairbanks, Alaska 99701) A summary of information about pumpelly brome, a close relative of smooth brome, its present uses, and a projection of future uses.

Paired Comparisons: A Method for Ranking Mule Deer Preference for Various Browse Species; by Susan M. White and Bruce L. Welch; 1981; USDA, For. Serv. Res. Note INT-308; 4 p. (USDA, Intermtn. For. & Range Expt. Sta., 507 25th St., Ogden, Utah 84401) Presents a method for rapid evaluation of mule deer preferences for winter browse species; reports the results of a study using local browse collection.

Range Grasses of Kansas; by Paul D. Ohlenbusch, Elizabeth P. Hodges, and Susan Pope; 1983 (Rev.); Kans. Agric. Ext. Cir. 567; 23 p. (Mailing Room, College of Agric., Kansas State Univ., Manhattan, Kans. 66502) Summary information with drawings for 34 selected grass species; includes brief descriptions, values, and adaptations.

Recovery of Nitrogen and Phosphorus after 17 Years from Various Fertilizer Materials Applied to Crested Wheatgrass; by J.F. Power; 1983; Agron. J. 75(2):249-254. (USDA, Agric. Res. Serv., Lincoln, Neb. 68503) A study of long-term effects of N and P fertilization with emphasis on nitrogen sources.

Response of Basin Wildrye and Tall Wheatgrass Seedlings to Salination; by Bruce A. Roundy; 1983; Agron. J. 75(1):67-71. (USDA, Agric. Res. Serv., 920 Valley Road, Reno, Nev. 89512) Investigated the growth, survival, and water potential responses in relation to their evaluation for seeding arid, saline rangelands.

Service Life of Treated and Untreated Rocky Mountain Area Fenceposts: A Progress Report; by Donald C. Markstom; 1984; USDA, For. Serv. Res. Note RM-436; 5 p. (USDA, Rocky Mtn. For. & Range Expt. Sta., 240 West Prospect St., Fort Collins, Colo.) Service-life tests of ponderosa pine, Engelmann spruce, lodgepole pine, and Douglas-fir fenceposts after 15 to 22 years post-treatment under field conditions.

Stem Flow on Western Juniper *(Juniperus occidentalis)* Trees; by James A. Young, Raymond A. Evans, and Debra A. Easi; 1984; Weed Sci. 32(3):320-327. (USDA, Agric. Res. Serv., 920 Valley Road, Reno, Nev. 89512) Studied the magnitude and implications of canopy intercept and stem flow of rainfall by western juniper trees; related findings to placement of granular herbicides.

Summer Annual Forages for Livestock Production in Kansas; by G.L. Posler, K.K. Bolsen, and M.Y. Nuwanyakpa; 1983; Kans. Agric. Expt. Sta. Bul. 642; 19 p. (Bulletin Room, Agric. Expt. Sta., Manhattan, Kans. 66502) Evaluated summer annual forage grasses for grazing and hay and silage; their use may be complemental in meeting native pasture feed shortages.

Timing—The Key to Herbicidal Control of Mesquite; by B.E. Dahl and R.E. Sosebee; 1984; Texas Tech. Univ. Range and Wildl. Mgt. Note 2; 5 p. (Dept. Range and Wildl. Mgt., Texas Tech Univ., Lubbock, Texas 79409) Provides recommendations for herbicide application timing based on air and soil temperatures, budbreak, and other climatic and site factors.

Winter Wheat Response to Heavy Grazing in the High Plains of Texas; by E.K. Thompson, S.R. Winter, and J. Barnes; 1984; Tex. Agric. Expt. Sta. Prog. Rep. 4187; 7 p. (Bulletin Room, Agric. Expt. Sta., College Station, Texas 77843) Planting dates, N fertilizer needs, and other management implications of grazing plus grain production from winter wheat, an alternative to fall-winter grazing of rangelands.

Legislative Log

Legislative Log for October *Rangelands* as of September 12, 1984.

On September 5, the members of the 98th U.S. Congress convened after a recess starting on August 10. They faced a long agenda of important items with limited time left before a proposed adjournment date of early October. There are some rumors that the closing date will be extended several days to avoid a special session later in the calendar year. Following are a few highlights on items of interest to SRM members.

Agriculture Appropriation Bill

Prior to the August recess, the Senate Appropriations Committee passed the fiscal year 1985 Appropriation Bill. The amounts were slightly above the House-passed version and slightly more than the Administration's request. There were differences on several items. The Senate version of the Sodbuster Bill-S663 was included as an amendment. A conference on the two bills was slated for mid September. There was optimism that a bill would be forthcoming. There was a feeling that the Sodbuster Amendment might not survive since the House Bill version was so much more complete and not acceptable to the Senate, at least in part.

SRM is interested in the outcome of the conference since the Senate included $1 million for Title M-Cooperative Range Research and $4 million for the Renewable Resources Extension Act (RREA). The House version and administration requests did not include anything for these two items. In addition SRM is interested in the budgets of the Soil Conservation Service, Agricultural Research Service, and Cooperative State Research Service included in this 1985 fiscal year appropriation bill.

Interior Appropriation Bill

The House has already passed this bill for fiscal year 1985. The Senate Interior Committee have completed their action and the bill was scheduled for floor action the latter part of September. Although there are differences between the two bills, in amounts proposed, approaches to synfuels and offshore leasing, most observers believe these can be resolved in conference. A bill is expected before the end of this session, probably before the September 30th end of this fiscal year. An evaluation as to the impacts on range and related activities will be given in the next issue of *Rangelands*. SRM is interested in the budgets of the Fish and Wildlife Service, the Bureau of Land Management, the Forest Service, and others included in this fiscal year 1985 bill.

Other Legislation:

SRM has been monitoring and has had input on some

additional bills. To mention a few and briefly outline present status:

S-457 and H.R. 1675. Amendments to the Wild Horse and Burro Act of 1972. Forecasts at this time are that these amendments are unlikely to be acted on this session.

S-663.-H.R. 3457 and other companion House bills. Sodbuster Bill and related issues. S-663 was passed by the Senate and a similar but more complete bill was passed by the House. The two versions were so far apart that the conference on the bills resulted in a stalemate. At the moment it appears likely that this issue will be considered in the 1985 Farm Bill.

S-27 and H.R. 999. American Conservation Corps Bill. Patterned after the CCC program of the 1930's, it was passed by the House and is awaiting action by the Senate. If passed this session funding at a reasonable level is unlikely.

Sign Interagency Agreement

The Oregon Association of Conservation Districts recently joined eight other state and federal resource agencies in signing an agreement to coordinate natural resource management and planning activities on public and private lands in the state. The agreement is designed to resolve or prevent conflicts of interest in the use of such resources as forest lands, rangelands, stream corridors, private ranches and farms.

Joining the State Association in the agreement were the heads of heads of the Oregon Department of Agriculture, U.S. and State Forestry agencies, Fish and Wildlife agencies, the Bureau of Land Management, Soil Conservation Service, and State Extension Service.

NACD Public Lands, Pasture, and Range Committee Meet

Support for the rangeland research provided by the 1981 Farm Bill, but never funded by USDA, was expressed by the NACD Public Lands, Pasture and Range Committee at a meeting in Wichita, Kansas. The Farm Bill called for study to improve the production and quality of desirable native or introduced forages for livestock and wildlife, stating that forage production of rangeland could be increased at least 100% through improved range management practices.

In other action, the committee expressed concern about rule changes for the Great Plains Conservation Program related to re-application of conservation treatment for rangelands. Key participants, along with NACD committee members, included Dr. **Joe Schuster,** President of the Society for Range Management (SRM), **Peter Jackson,** Executive Vice President, SRM; **Ray Beck,** Administrator of the Montana Department of Natural Resources & Conservation; and representatives from the SCS, Extension, Bureau of Land Management, Forest Service, and Cooperative State Research Service.—*NACD Tuesday Newsletter*

Ikes to Fight Overgrazing

The Portland Chapter of the Izaak Walton League of America has launched a campaign to curb livestock overgrazing of public langes in that state. The group is concerned with grazing practices on national forests, the public domain, and national wildlife refuges.

The Chapter recently issued a policy statement on its new program to "Insure that proper control of livestock grazing is exercised to prevent further degradation of soil, water, forest regeneration, and fish and wildlife habitat. . . ." It plans to support reduced grazing through use of competitive bids, encourage the purchase of grazing permits with public and private funds, insist that livestock be prohibited on those purchased allotments, encourage fencing and other measures to protect riparian areas from livestock, oppose subleasing of federal lands by grazing permittees, and reject the current stewardship program for federal rangelands because it gives grazing permittees too much control over the land.

Foresters Warn of Impacts

American's foresters have issued warnings that human population growth and acid rain are dire threats to the nation's welfare. The statements came from the Society of American Foresters.

A group not commonly identified with the discussion of population pressures, the Society has some strong views on the issue. Leaders of the national professional forestry organization noted in a recent statement that a true conservation effort needs planning, not only in terms of natural resource programs, but also in terms of human demands on those resources. If human populations continue to increase substantially, they said, insatiable demands on forest resources will occur. "The best science and technology we can devise will not extricate use from the limitations of the carrying capacity of our environment."

The foresters also labeled "urgent" the need to find out more about the effects of acid rain on world forests. They noted the increasing and alarming evidence of forest decline worldwide from the effects of atmospheric pollutants. The Society recommended a vigorous research program to identify the pollutants causing the problems.

States Enact Recreational Access Laws

Twenty-three states have made changes in their trespass-liability laws since 1980 to protect landowners who allow public access to their land for hunting, fishing and other recreation.

A study of liability-trespass problems was completed in 1979 through a cooperative effort of the Wildlife Management Institute, International Association of Fish and Wildlife Agencies, National Association of Conservation Districts, National Rifle Association and National Wildlife Federation. The study revealed that landowner concerns about liability and trespass were restricting recreational recreational access to private property. A model law was drafted and subsequently adopted by the Council of State Governments for the 1980 Handbook of Suggested State Legislation.

The cooperating groups encouraged states to use the model act and update their liability-trespass laws. And 23 have responded thus far.

License Receipts Up, Sportsmen's Numbers Down

The number of licensed hunters and anglers in the U.S. dropped last year, but the receipts from hunting and fishing license sales rose dramatically.

There were 16,372,904 licensed hunters afield in 1983. That is 375,637 fewer than the year before. There were 29,130,543 fishermen licensed last year, 450,783 less than in 1982.

Michigan Gets 404 Authority

Michigan is the first state to get authority from the federal government to administer its own dredge and fill permit program under Section 404 of the Clean Water Act.

The U.S. Environmental Protection Agency announced August 3 that Michigan's request to handle the 404 permit program had been approved.—*Wildlife Management Institute Outdoor News Bulletin.*

Congressional Research Service Range Workshops

After some delays in scheduling, the CRS workshops will be held in their building on October 10 and 11 and December 4 and 5. SRM will be represented at both sessions. Results of the sessions will be reported in future issues of *Rangelands.*

SRM

Condensed Minutes from the Advisory Council Meetings

Wenatchee, Washington
July 16-18, 1984

All items outlined below were approved by the Advisory Council and taken to the Board of Directors. Unless otherwise noted they were accepted by the Board officially or approved for implementation if no formal motion was required. Items in the last section were discussed by the Advisory Council but were not presented to the Board.

Membership Items

To provide an incentive for recruitment of Commercial members by Sections, a rebate program was approved. Sections recruiting Commercial members will receive a rebate of 20% of a Commerical member's dues the year of recruitment and 10% of the dues for subsequent years with a maximum rebate of $200.00 per Commercial member.

Meeting Sites

The Board approved Reno, Nevada, as the site for the 1990 Annual meeting.

Employment Affairs

1. An ad hoc committee will review employment opportunities and employers' needs. Results of the review will be provided to universities and other educators (trainers) to assist in development of their programs to improve employment opportunities in the range profession.

2. The Employment Affairs Committee will implement educational programs to inform prospective employers of the value of hiring range-trained people.

Federal Range Extension Program

1. The USDA Extension Service administrator will be encouraged to place the Federal Range Extension Program Leader position on a salary level equivalent to that of of other Natural Resources Program Leaders.

2. The Board will take under advisement an Advisory Council recommendation that the SRM seek a National Renewable Resources Extension Act Advisory Council.

Professional Improvement

A short course will be offered during the 1985 Summer meeting to be held in Amarillo. The Professional Affairs Committee will develop subject matter to be taught and will coordinate the workshop with the Texas Section. The workshop will provide an opportunity for SRM members to receive professional improvement training.

Items Not Presented to the Board

1. The Advisory Council will conduct a workshop during the Annual meeting at Salt Lake City. The purpose of the workshop is to discuss successful Section activities.

2. The Sections were encouraged to sell *Rangeland Hydrology.* Sections may sell this publication for $10.00 per copy. $8.00 per copy will be returned to Denver. The books are available on consignment from the Denver office.

3. The formal organization of the Grazing Lands Forum is anticipated in March of 1985. The Forum is to be an organization of organizations with interest in the various aspects of grazing lands. The Forum will promote communications between the organizations and make the general public aware of the value of grazing lands.

4. Dana Paterson of the Pacific Northwest Section (Panorama Chapter) took minutes of the Advisory Council meetings. We are grateful to Dana for the excellent set of minutes.—

Tommy G. Welch, Chairman
Don Nelson, Chairman-elect

The Importance of Rangeland and Range Conservation

Testimony Presented to the
Republican National Committee on Agriculture
Dallas, Texas • August 13, 1984

Mr. Chairman and Members of the Committee, I am Dr. Joseph L. Schuster, President, Society for Range Management (SRM). The Society for Range Management is a professional organization comprised of individuals with a common interest in the study, management, and rational use of rangelands and related ecosystems. The subsequent testimony on the importance of rangelands and range conservation as a national issue is presented at the request of Senator Roger Jepsen. As representative of the Society for Range Management, I will present several key points for your consideration and amplify each with my rationale.

1. The Rangelands of the United States Are A Vital National Resource That Must Be Conserved For the Future

The 853 million acres of rangeland represent 38% of our nation's land base while an additional 362 million acres of forest, cropland and pastureland are used as range by livestock and wildlife. Rangeland is the forage base for most of the western livestock industry, but just as importantly it provides wildlife habitat, recreational opportunities, and off-site water for millions of Americans. Much of our nation's energy and mineral reserves are found under rangeland. Thus, it is a vital national resource with many economic and social benefits. In fact, Rangeland is the resource for the future when it will become more and more important for food, fiber, recreation, and water. By the year 2030 the U.S. population will exceed 300 million. Nonetheless, the nation's rangelands will have shrunk by an estimated 67 million acres because of land use changes to industrial, cropland, and built-up areas. With the shrinking base and the intensification of their use it is imperative that this nation conserve our rangelands for the future.

2. There Is A Pressing Need To Transmit Public Concern For Soil And Water Conservation On Rangeland Into National Policy

We must have a greater national commitment to both soil and water conservation on rangeland. This concern has become evident in recent years, and there is a pressing need to transmit public concern for conservation of our natural resources into national policy.

Our soil and water resources are our nation's wealth. It is the strength of our nation, and its conservation is the responsibility of the landowner (public or private). We as a nation must realize that there is a cost for the conservation. The public must realize that the operator is not the only beneficiary of rangeland conservation practices. The enhanced environmental quality resulting from conservation is generally an off-site public benefit. Therefore, as a nation, we must be willing to help the land user apply long-term conservation treatments. The Administration should consider tax incentives for conservation practices; long-term, low-interest loans for conservation treatments; and direct cash outgo in USDA programs toward range conservation. The USDA must adopt policies that will provide economic incentives rather than economic penalties to range conservation efforts by private operators.

In order to meet future needs of water, food, fiber and recreation; rangelands and range conservation should not only become a USDA priority but a National priority.

3. It Is Essential To The Future Welfare Of The Nation That The National Commitment To Rangeland Resources Management And Conservation Be Increased Relative To Other Natural Resource Programs

Rangeland is a unique land resource relative to cropland and forestland. It furnishes both agricultural products and essential natural resources such as water, wildlife and recreation. This uniqueness should be realized when programs are directed toward range conservation. This has not been done in the past and range has suffered from lack of recognition and program development. Consequently, range has not received the resources and program recognition it deserves.

Evidence:

a. The range management effort in the U.S. Forest Service (FS) and the Bureau of Land Management (BLM) has declined drastically in recent years while those in forestry, wildlife, and recreation have received substantial increases.

b. Range received only slight consideration in the Resources Planning Act (RPA) Alternative Goals 1985 Program (e.g., livestock grazing was not treated as an opportunity area as were timber, wildlife, and recreation).

c. Most soil and water conservation programs are oriented toward croplands. The USDA Secretary's Memorandum 9500-5, dated 15 December 1983, implies that rangeland will be put on par with the rest of American agriculture. It is evident that this has not been done because of the thrust of present conservation policy and reduction in range conservation efforts. Manpower and funding commitments to range in both USDA and USDI continue to decline in relation to other natural resources. The Range Research Act (Sub Title M of 1981 Farm Bill) has never been funded, and the Renewable Resources Extension Act of 1978 has received minimal funding and then only through the efforts of Congress. Its formula for funding allocations to disciplines slights range.

d. The Soil Conservation Service (SCS) has placed major emphasis on "conservation tillage" on cropland, but there is no comparable effort in conservation for rangeland. I propose a "conservation management" movement for rangelands.

e. Except for special studies, there is no adequate way to identify range inputs and products within USDA.

Within the Agricultural Research Service (ARS), range is mixed with pasture and forage research. Within the FS, range is lumped with wildlife and fisheries. Within the Cooperative Research Service Inventory System, range is combined with several other activities rather than as a resource commodity (as forestry is treated).

These and other reasons indicate that range and rangelands should have separate identity in USDA and be treated as a land resource with several commodities and uses.

4. Development And Application Of New Range Conservation Technology Is Imperative If Rangelands Are To Meet The Increased Demands Of An Affluent Population

Over half the rangelands of the U.S. are seriously degraded and suffer reduced productivity caused by ill effects of past mismanagement, overgrazing, and erosion. Only 34% of the U.S. rangelands are in good or better condition. Ranges in fair condition constitute 45%, while 16% are rated poor. Ranges in fair condition are providing goods and services at less than half their ecological potential while those in poor condition are producing at less than 25% of their potential. Rangelands in these lower condition classes are much more susceptible to erosion and drought than those in good condition. With the considerable amount of additional pressure that will be placed on American rangelands by recreationists, hunters, and demands for increased water yield in the next two decades it is essential that range research and range technical assistance be accelerated. We cannot afford further range deterioration. The productive potential of our nation's rangelands must be maintained where it has not deteriorated and enhanced where it has. To accomplish this, range conservation must truly become a part of the total U.S. agricultural commitment. It must receive resource allocations in proportion to its value to the nation.

5. Federal Soil Conservation And Range Management Programs Need To Be Redirected To Stop The Diversion Of Federal Assistance From Range And Related Grazing Lands.

The SRM lauds the priorities set by the National Program of Soil and Water Conservation (NCP). Reduction of erosion and conservation of water are vital to this nation's welfare. We are concerned, however, that rangelands have not received their share of the conservation effort. The Special Areas Conservation Program of the SCS, by using erosion as the sole criterion and the Universal Soil Loss Equation (USLE) as the major measure of erosion, heavily favors "targeting" toward cropland. The result is continued rangeland degradation and a declining effort in range conservation because of migration of funds and manpower to predominantly cropland regions.

6. The Rangelands Of The United States Are A Primary Source Of Increased Water Supply

The 853 million acres of rangeland are a vast watershed, and although much of it is in the semi-arid west, it provides significant water for municipal and agricultural uses. It has the potential to provide even more. A 1983 report issued by the Office of Technology Assessment cautions Congress that brush encroachment on the nation's rangeland poses a major threat to long-term productivity. Excessive brush is also reducing our nation's water supply. Improvement of range condition not only enhances on-site water use by plants but reduces soil erosion, and increases off-site water quality and yield. Noxious brush and weeds now infest 350 million acres of privately owned rangeland. A 50% reduction of these noxious plant infestations would make 12.2 quadrillion gallons of water available each year for other uses.

7. The Criteria Used To Determine Cost-Effectiveness Of Range Conservation Practices Should Consider All Benefits, Not Just Increased Livestock Production

We urge that USDA recognize that benefits of range conservation practices accrue to the public as well as the land owner. Increased grazing is not the only value derived. In addition to increased forage production range improvements: (1) enhance fish and wildlife habitat; (2) enhance the recreational opportunities; (3) enhance water conservation on-site and both quality and quantity off-site; (4) reduce flood damages; and (5) reduce siltation and sedimentation downstream. All are for the social good, and all should be considered when evaluating the benefits of range conservation practices. The Economic Research Service should be tasked to support range products research.

VIEWPOINT:
Use of USLE on Rangelands

Kenneth G. Renard

Having read the SRM position statements in *Rangelands* 6(3):139-140, I was pleased to see that SRM is involved in taking stands on issues they feel affect the membership. Not being familar with Coastal Marsh problems, I cannot comment on that portion of the position statement. The discussion of USLE contains a number of errors and misconceptions which I feel have done a great deal of harm to those concerned with stewardship of the soil resources of rangeland.

The transmittal letter of SRM President J.L. Schuster states, "Until technology is developed to replace it . . . the USLE as inapplicable on rangelands, and adopt proven and acceptable techniques for evaluating vegetation as a more accurate and earlier indication of degradation of the total rangeland resource." It is a foregone conclusion that the USLE was never intended to assess anything other than the erosion that would be expected over a long period as a result of the process of water erosion. Perhaps that is where the problem lies. Is this technology being used to assess water supply, water quality, wildlife, plant resources, etc.? If so I can't imagine how. ARS scientists are attempting to develop

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The author is indebted to D.A. Farrell, G.R. Foster, C.W. Johnson, D.A. Woolhiser, and J.R. Wight for their suggestions and comments concerning the paper.

such technology with models such as SPUR (Wight 1983) and EPIC (Williams et al. 1983). I suspect it may be some time into the future before all the varied conditions encountered on rangelands can be studied and validation data for these models obtained. What is the land manager to do in the meantime? The evolving models can be used with caution recognizing that better information *will be* forthcoming as our technology and understanding advance. Recognize however, that the models cited also use USLE or some modification thereof.

What are the considerations involved in assessing the health and quality of rangeland resources? Any list we might develop would be long but would certainly consider the following:

1. The present health of plant, animal, soil, etc. communities must be considered, along with the time scale involved in a change. It is important to recognize that the time scale of impact may be different for different communities. For example, the soil may respond more slowly than perhaps does vegetation. Also, the interactions among communities must also be considered.

2. Not only must the current health of the system be assessed, but the rate of change must also be considered. The current state of health may be acceptable, but there may be indicators that show that the system is changing, and perhaps changing at such a rate that serious degradation may occur by perhaps 50 years; and unless something is done now, the change may, by that time, be irreversible.

3. Indeed, the current soil resource on a particular rangeland site may be adequate, but erosion may be degrading it. The vegetation may be allowing excessive erosion that could be slowly degrading the soil. Perhaps in 50 years, the erosion will have irreversibly damaged the soil. The point is simply this: estimating erosion is an important component of the assessment of the quality of rangeland, as is the evaluation of vegetation. To ignore erosion is as serious as using erosion as the sole measure of quality of rangeland. Therefore, there is a need to estimate erosion on rangeland, and estimating erosion is clearly a useful activity of USDA. How those estimates are used is an issue, but not a USLE issue!

Consider the use of two rangeland sites in the same climate and physiographic region. One pasture (call it A) is observed to have flat slopes and short slope lengths whereas pasture B has steep slopes and long slope lengths. Both have been abused such that they are classified as having a "poor" range condition. What are the implications of using USLE or "range condition" as indications of a national problem and how our precious resources should be used to rectify the problem? USLE would say that erosion losses on pasture A are small and would not likely result in loss in potential productivity over a long time period while on pasture B, there will likely be a loss in soil productivity. Thus technical and financial assistance would be directed to B and not to A. On the other hand, if we use "range condition", both are in poor condition (as a result of mismanagement?) and technical and financial assistance goes to both with result (under a budget constraint) that the real social problem pasture, B, is underfunded. It seems that the "range condition" definition rewards the poor manager in such an example. Furthermore, society's interest in such instances where there are "off-site" effects or potential permanent losses in soil productivity potential may justify use of public resources.

4. Having established that erosion must be estimated in order to conduct a complete and proper assessment of range-land health, the next question is choice of an erosion prediction method. Does one choose the USLE or some other method? In spite of its recognized shortcomings, no other method overall is as satisfactory as the USLE. Various federal agencies, ARS, BLM, FS, and SCS, as well as university scientists, are actively pursuing research and making major improvements in the USLE. No other method has been proposed nor is there any research that is likely to produce an alternative method any time soon that will work as well as the USLE, at least within five years. Inasmuch as we recognize shortcomings in the USLE, with the exceptions of estimating erosion on a storm-by-storm basis using a rainfall and runoff driven model, no available theory or data suggests that the USLE is basically unsound or that erosion estimates will radically change in a relative sense with a new equation. Current work with rainfall simulators will refine absolute values and basically shift things like ground cover curves up or down.

The position statement iterates: "... Whereas the universal soil loss equation has been prescribed as the formula for measuring (a more correct word is *estimating*) sheet and rill erosion (correct statement), it has not been validated for land uses other than cropland" (an incorrect statement). Although we would certainly like to have more validation of individual parameter values, some work has been done on rangelands and forest lands. Furthermore, the factors considered in the USLE are widely acknowledged to have major effects on water erosion, whether it be on cropland, rangeland, forest land and/or urban land. The data embedded in the values of the terms of the USLE represent over 10,000 plot years of natural and simulated data. Yes, most of the data were from areas east of the Rocky Mountains, but is water erosion there a different mechanism than on rangelands of the western United States? Does a plant physiologist or grass breeder use a different technique on grasses in an eastern pasture compared to western range grasses? The answers to these questions are, I suspect, that the tools used should be similar, but the relative magnitudes may vary. Thus, we need more calibration/validation, a statement difficult to refute.

The statement continues, "Whereas, the plant, animal and water resources will be severely deteriorated on most rangelands prior to the USLE indicating soil erosion problems;" which, again, may be partly true. If the positive emphatic verb phrase *will be* were replaced by *may be,* the statement might be partly believable. What proof is there for such an emphatic and positive statement? Finally, as stated above, USLE erosion estimates cannot be used as an indication of plant and animal resource status, although, other things being equal (RKLS and P), a high soil loss indicates a lower vegetation density. The USLE can and does indicate potential problem areas as indicated earlier.

The statement "Therefore, ..., adopt proven and accepted techniques for evaluating vegetation responses as a more accurate and earlier indication of degradation of the total rangeland resource ..." is admirable, but it certainly does not solve the immediate problem of most rangeland managers. Furthermore, much progress has been made adopting USLE parameters values to conditions encountered on rangelands

(Johnson et al. 1984; Simanton et al. 1980; Simanton et al. 1984; Renard 1982). What technique(s) might be involved? When might such techniques be available? Some of the natural resource simulation models mentioned earlier might help (e.g. SPUR and EPIC), but there are still gaps in some of this technology and research is underway to define the necessary parameter values needed for simulation over the varied topographic, climatic, soil and plant communities encountered on western rangeland. Furthermore, ARS scientists, working with BLM and SCS scientists, are developing a handbook for applying the USLE on rangelands which incorporates the most recent data available from rangelands. It is difficult to speculate what techniques might be used if these do not suffice or if the techniques were discarded in the preparation of the position statement.

Both research and user communities have complained for some time about the poor estimates that the USLE provides. Such complaints are often the result of limited data (remember the soil loss is an average value that would be expected over a long period, presumably at least for the 20-year plus record used in most of the development), or worse yet, data from a few individual storm events. I have been as guilty of this criticism as anyone. Unfortunately, for years, if not decades, the support for a research effort on rangeland erosion has remained grossly inadequate. However, we still must try to apply what we know about erosion principles to develop some technology for rangeland managers. If one asks a land manager to list the things in C that affect erosion, a list of 5 to 10 items will surface. To make tables to cover all of these items then produces a horrible matrix of tables that are confusing to use. Thus, we propose incorporating these items in equation form, which will lend itself readily to the continuous modeling efforts that are evolving. If the user wants tables for field use, he can then produce his own from the equation/algorithm. In the rangeland USLE handbook that is being developed, we are proposing to use a subfactor approach for evluation of the C (cover-management) factor, in the USLE. The user community is complaining that the subfactor method is too involved and requires too many resources to use. Nothing is free and if we need to reflect specific cause-effect relationships, this can only be accomplished by greater detail.

The final statement, I presume, was intended to say that additional research on range resources is needed. As one involved in research, I support such a statement. However, the statement says, ". . . to develop improved techniques for monitoring all components indicating the health and trend of the rangeland ecosystem and its response to treatment." Certainly there is more needed from research than just monitoring. Research must develop ways to improve the rangeland ecosystem to overcome not only present but past abuses, develop new and better vegetation capable of withstanding the pressures of the competing range resource uses, develop ways to use the limited water resources more efficiently, etc.

Recognizing the weakness of the USLE, let us also recognize its potential. If soil loss can be related to site variables such as soil surface condition, vegetation and weather with equations such as USLE, then range deterioration in terms of soil loss can be predicted from site measurements. And, through the use of models such as SPUR and EPIC (which use USLE), long-term simulations can be used to predict and make comparisons of infinite scenarios of treatment and management practices. Monitoring is somewhat an after-the-fact observation. And for some rangelands, recovery from management-induced deteriorations is a process that occurs on a geological time scale. Thus if we all work together (including encouraging the support for research on rangeland resources), we will get to the point where we can truly manage rangelands as the society name implies for the benefits of all who use this vast and important resource.

References

Johnson, C.W., N.D. Gordon, and C.L. Hanson. 1984. Rangeland sediment yields with snowmelt by the MUSLE. Presented, Summer meeting, Amer. Soc. Agr. Eng. Knoxville, Tenn.

Renard, K.G. (Ed.). 1982. Estimating erosion and sediment yield on rangelands. USDA-ARS Agr. Rev. and Manuals, ARM-W-26.

Simanton, J.R., H.B. Osborn, and K.G. Renard. 1980. Application of the USLE to southwestern rangelands. p. 213-270. *In:* Hydrology and Water Resources in Arizona and the Southwest. Vol. 10. Univ. Arizona.

Simanton, J.R., E. Rawitz, and E.D. Shirley. 1984. Effects of rock fragments on erosion of semiarid rangeland soils. p. 65-71. *In:* Erosion and Productivity of Soils containing Rock Fragments. Soil Sci. Soc. of Amer. Spec. Pub. No. 13.

Wight, J.R. (Ed.). 1983. SPUR-Simulation of production and utilization of rangelands: A rangeland model for management and research. USDA MISC. Pub. No. 1431.

Williams, J.R., K.G. Renard, and P.T. Dyke. 1983. EPIC-A new method for assessing erosion's effect on soil productivity. J. Soil and Water Conserv. 38:380-383.

President's Notes

A milestone event for SRM occurred in August. The Society was asked to present testimony emphasizing the importance of rangeland and range conservation to the Republican National Platform Committee. The testimony, reported elsewhere in this issue, received favorable attention from Senators Jepsen and Dole and the Committee. As a result rangeland conservation is included in a small but important 'splinter' in the Agriculture Plank of the Republican Platform.

This event was followed by a successful nationwide effort to provide information to the Conferees of the Joint Committee on Appropriations about the need to fund the Rangeland Research Act (RRA) and the Renewable Resources Extension Act (RREA). The response to our request for contacts by Section Presidents, Board Members, and others was most gratifying. Indeed, *the response by SRM members was fantastic and so was that of the Joint Committee on Appropriations.* Their recommendation is for funding the RRA at $500,000 and the RREA at $2.5 million. Neither is as much as we had hoped for and need, but the initial funding for RRA is significant in that it is recognition of its need in spite of tight budgets. The Society is alive, concerned, and able to take steps to influence public policy.

An effective means of influencing range policy is through public education about the social and economic value of range and through contacts by local citizens with their elected representatives. Both of these efforts are best done at the Chapter and Section level. The response to our call for help in support of the Range Research Act and Renewable Resources Extension Act was exhilarating and gratifying, and I wish there was space enough to name those who responded so well to the call. Thank you.

The response of public officials and legislators to our efforts to make them aware of the issues concerning range has been gratifying this year but still not optimal. Range management is not faring well in terms of federal or state appropriations in the U.S. In fact, allocations to research for range management practices have declined in the last decade in comparison to allocations for other natural resource disciplines. The pendulum of attention and effort once afforded range livestock grazing has swung so far in the direction of wildlife, recreation, watershed, and aesthetics as the major uses of rangelands that range grazing is threatened, at least on public lands. The image of domestic livestock grazing has been tarnished to the extent that many believe that grazing on public rangeland should be phased out. The SRM recognizes that livestock grazing is a desirable rangelands use and that production of animal protein from rangeland is of vital importance in meeting the nutritional needs of our expanding world population. Therefore, we must continue our efforts to enhance the public image of range and insure the formulation of favorable public policy.

The Society has a fairly well established response mechanism developed, by which we respond to matters pertaining to public policy. To the extent possible, all steps outlined in our procedures for public policy formulation are used in responding to issues. In times of urgency, the President may respond with a statement of SRM policy, but as a general procedure all efforts are and should be made deliberately to involve other offices, the Board, Advisory Council, and applicable committees.

Reaction to issues and policy is not nearly so fruitful as influencing policy in its rudimentary stages. Few individuals at the policy making level have range training or are cognizant of range problems. Therefore, SRM is developing procedures to influence future policy. We hope to develop a document which I will call 'A Program for Range' which presents the state-of-range and detailed plans for meeting the needs of range research, extension, education, and technical assistance in the future. This document will be the basis for communications with the agricultural community and the Legislator about range issues and program needs. Second Vice-President Fee Busby has volunteered to take the lead in developing this document and in communicating it to the proper groups.

I look forward to discussing Society affairs with members at the annual meetings of the Mexico, Texas, and Utah sections this fall. The 1985 Annual Meeting Committee is developing an informative and enjoyable meeting in Salt Lake City. There is a full slate of technical papers plus four special symposiums. Better make plans early because this is the Society's major annual event and a great opportunity to keep abreast of new technology.—**Joseph L. Schuster**, President, SRM

Executive Vice-President's Report

For the first time since I accepted this position, I have had the opportunity to spend some time at our Denver office. During the last two months, nearly half of my time has been here and it has been very pleasant. It was also good for me to see the day-to-day operation over a little longer period of time. It has certainly proven out my high opinion of our staff.

In the past, when I came running through the door all out of breath, they literally flew around the office getting my work out. Well, let me tell you—they work that hard day after day. Frankly, we all need to praise them a lot more and criticize a lot less.

Speaking of praise, I was proud to read two comments sent to our Editor Pat Smith. Let me just share them with you: "The proofs were the best I have read. . ." and, "We appreciate your efforts in making the *Journal* a quality publication. The short turn around time in the review process and the good communication between the authors and the editor and associate editors make publishing in the *Journal* a pleasure." Now, that just made everyone feel just plain good and ready to work even harder. By the way, you'll notice that

praise extends to the associate editors too for a job well done.

And, speaking of work, Pat Smith came by, right on schedule, waving two articles from the September *Journal*. I read them both carefully and, as usual, I had to agree with Pat that they were good, especially for producers. So when you go thumbing through your copy, do me a favor and read the article on "Blue Grama" by Bill McGinnies and the article on "Streamside Management" by Boone Kauffman and Bill Krueger. They are timely and address subjects that aren't going away at least for the forseeable future.

There are always a few cloudy days in everyone's life and SRM has its fair share, particularly with the Postal Service. I believe that I've turned that outfit every way but loose and nothing seems to work, particularly in reference to Canadian mail. Last year it looked great—the complaints dwindled down to just a few. Now, I swear people are failing to get journals in every state. Please do us a favor and carefully check your address on this issue of *Rangelands*. If there is an error, no matter how small, send it in immediately. It can't help but improve things.

I can't be too overly pessimistic, so let me share a short article from a Postal Publication regarding Canadian mail and their new agreement with the U.S.A.

Delivery Improvement Seen as U.S.-Canada Border "Evaporates"

The United States Postal Service and Canada Post Corporation have signed a comprehensive agreement to improve service and develop and expand the mail market between the two countries. An agreement was announced August 8th that would have the effect of "evaporating the border" between Canada and the U.S. and treat the areas as a single, coordinated postal network.

A joint Canada/U.S. service improvement task force has already met and begun to put the customer first, improve service and conduct business in a competitive and business-like manner. The task force will establish a market development program to increase the volume of mail exchanged between the two administrations.

The two postal systems are committed to significantly improve the speed, reliability and range of service to customers mailing between the two countries. Service targets will be used to monitor performance. Transborder mail will receive the same priority and service level as domestic mail.

As a result of improved service, combined with innovative joint marketing efforts, it is anticipated that transborder mail volumes will increase by 10 to 13 percent over the next three years. The task force will develop common transportation links; adapt machinery to sort according to each others postal codes; ensure that processing plants move toward a common mail exchange network and develop improved processing methods that will reduce damage and lower costs.

I'm hopeful.

Back to good things. Our membership is stable this year and increasing slightly. We have some membership people who are working hard and needing your help. Please pitch right in especially on those Commercial memberships.

This report wouldn't seem right without my usual travelog —here goes. I attended the Joint Council on Agriculture Research in Washington, D.C. It was an excellent meeting, and I believe that we have been successful in obtaining a block of time on their agenda to present the Range Research situation. In addition, while I was in Washington, I called on quite a number of people in both the agencies and in Congress.

When I returned to Denver, it was just in time to attend the Colorado Section Tour at the Central Plains Experimental Range. The tour was well attended and I enjoyed it a great deal. Incidentally, the tour was a joint effort with other groups and I believe that these kinds of efforts are very worthwhile.

My last trip was a joint work and vacation one. I accompanied my wife to her National Post Masters Convention in Columbus, Ohio. I was well armed with facts and figures on our mail problems, but it was pretty hard to get a word in edgewise. Every time I stopped to catch my breath, they would start in on their troubles with the system and I just felt like an amateur. It really wasn't that bad, but we have to remember that they are moving 108 billion pieces of mail a year and that is quite a load.

When the machinery is in place and operating as described at their work sessions, I sincerely feel that we will have superior service again. Perhaps we all should be a little more patient and write a few less letters—what do you think?

I keep promising a shorter report; however, there is only one way to shorten it and that is to stop. Thanks again for your patience. It is truly a pleasure to serve in this position for such a fine organization.-**Peter V. Jackson,** Executive Vice-President, SRM

We're Snubbed to a Post (Office)

Claims for missing journals have increased this year, especially from our Canadian members and subscribers. Attempts to rectify the situation from our office have been futile as there seems to be no pattern or common cause for the problem.

After compiling all available information and statistics in this regard, Mr. Ed McKinnon, Mr. Peter Jackson, and I met with local postal authorities on September 6 to try and instigate an investigation.

During our meeting we were informed that the U.S. Postal Service and Canada Post Corporation had recently signed a comprehensive agreement to improve service and develop and expand the mail market between the two countries. Targets for improvement include improved speed and reliability by giving transborder mail equal priority to domestic mail. Common transportation links, mechanical adaptations, and a more equitable financial settlement between the countries are being implemented. Results from this agreement, however, may not be noticeable for three to four months and this may be an optimistic estimate.

A tour of a local Air Express facility alone has demonstrated how many stops and sortings to which a single piece of mail may be subjected. Customs inspections alone may also delay mail for up to one full week and do not seem to rate a high priority. With this much time involved for priority mail, it seems almost certain that second class mail will experience even longer delays.

On a more personal level, local postal authorities have agreed to trace a random sampling of our journals in an attempt to locate any problems as well as working with our mailer to assure the most efficient mailing process.

As a large number of our claims seem to come from addresses of companies or universities, we are asking for your cooperation. Please be sure that your journals are not being borrowed or diverted before documentation of arrival occurs. *It has also been recommended that members use home addresses rather than places of business. Should you*

wish to do this, please contact our office and we will make the necessary changes.

We will continue our efforts and would appreciate hearing from you if you experience an improvement or if you feel you have information that would be helpful.—**Julie Fairchild,** Membership-Records, Denver Office, SRM

Frasier's Philosophy

As an author I have been "upset" when a reviewer or an editor "tore up" a paper I had written and suggested a major revision. I hope that as I have gained experience I am better able to accept criticisms in the context that they are given, namely they are suggestions for improving the paper. I know that sometimes I have made a statement with one idea in mind but it gave the reader a completely different interpretation.

I recently came across the following filler item in our local newspaper that helps me keep going when the revisions, in the eyes of the reviewer or editor, do not achieve the necessary result.

> "British novelist John Creasy has published 564 books. But he didn't make his first sale until after he'd received 774 rejection slips."

I know that I would probably not continue with that many rejections, but it does show that perseverance can pay off.

In the time since I have been Editor of *Rangelands* and served as an Associate Editor of the *Journal of Range Management,* I have had the opportunity to observe the problem from the other side. I know that there are many authors who wonder if the reviewer's and editor's comments are fair and if the requested revisions are worth the effort. I sincerely hope that they are. Even though "us 'old' writers will probably never change", I hope that new authors will accept my belief that the peer review and editorial comments are true attempts to assist the author in making a more concise and readable story.—**Gary Frasier**, Editor, *Rangelands*

Members Round About

Richard "Rick" N. Ross has been selected as Regional Director of Range and Watershed Management for the Pacific Northwest Region of the USDA Forest Service. Ross will move to his new position in early September from Duluth, Minnesota, where he has been Deputy Forest Supervisor of the Superior National Forest since January, 1980. A native of Oregon, Ross has been with the Forest Service sine 1960 and spent his early career in Oregon. He is a graduate in forestry of Washington State University. He earned a master's degree in watershed science from Colorado State University in 1970.

The Soil Conservation Society of America named **Harold F. Johnson** a recipient of its 1984 Honor Award.

SCSA President Floyd E. Heft presented the award at a banquet concluding the organization's 39th annual meeting.

The Honor Award is given to SCSA members and nonmembers for significant contributions in the field of land and water resource conservation.

Johnson, a Dwight, Kans., farmer was honored for 26 years of leadership in organizing efforts to implement sound land and water conservation through conservation districts. He assisted in getting the Kansas Water Resources Conservation cost-sharing program through the state legislature and served five of the past 10 years as chairman of the Kansas Conservation Commission.

President Heft presented a President's Citation to **Peter C. Myers**.

The President's Citation is given to individuals or groups who exert a special influence on SCSA activities through contributions of time or talent.

Meetings of Interest 1985

February 3-7
National Association of Conservation Districts
National Convention, Honolulu, HA
(Robert C. Baum, Pacific Region Rep., Suite 207, 831 Lancaster Dr. NE, Salem, OR 97301).

March 15-20
North American Wildlife and Natural Resources Conf.
Shoreham Hotel, Washington, D.C.
(L.R. Jahn, Wildlife Mgt. Institute, Suite 725, 1101 14th St. NW, Washington, DC 20005).

August 4-7
Soil Conservation Society of America Annual Meeting
St. Louis, MO
(SCSA, 7515 NE Ankeny Rd., Ankeny, IA 50021).

Sept. 7-11
American Fisheries Society Annual Meeting
Sun Valley, ID
(R.G. White, Montana Coop. Fisheries Unit, Dept. of Biology, Montana State Univ., Bozeman, MT 59717).

NCA Award Deadline Near

The award for "innovative application of new technology in beef cattle production," established by the National Cattlemen's Association in 1983, is presented annually to an individual who has demonstrated outstanding and innovative application of new technology which materially increases efficiency and profitability of beef cattle production.

International Beef Producers will provide the award winner with $1,000 in cash and will pay expenses to attend the 1985 NCA convention in Phoenix. The recipient will also receive a limited edition bronze entitled "a special breed," created by Oklahoma artist Jim Miller and commissioned specifically for this award.

Each award nominee must be a producing cattleman (not a company) who generates a substantial portion of his/her income from the beef cattle business.

Nominations and supporting material must be received by NCA at its national headquarters no later than October 31, 1984. Nomination forms and further information may be obtained by contacting Sandy Gallagher, NCA, P.O. Box 3469, Englewood, CO 80155 (303) 694-0305.

Candidates for SRM Offices

Jack R. Miller
7 Azalea Ct.,
Petaluma, CA 94952

Born: La Junta, Colorado, 1931

Educational Training: B.S. Forest-Range Management, Colorado State University; 1958.

Occupation/Employment: U.S. Forest Service 25 years; presently Director Range Management-Region 5.

Activities in SRM: Board of Directors, New Mexico Section; President, New Mexico Section; Chairman, Public Affairs Committee; N.M. Section Rep. to N.M.; Cons. Coord. Council, Board of Directors, SRM; Member & Chairman, Public Affairs Committee; Chairman, SRM Advisory Council; Member, Budget Committee; Member, and Chairman Planning Committee.

Membership/Activities in Other Organizations: S.A.F.-Chairman, Northern New Mexico Chapter; Xi Sigma Pi; Various service organizations over the years: Lions; Director, Santa Fe Girls Club; Volunteer Fire Organizations; etc.

Statement of Jack R. Miller

I consider myself fortunate and honored to be a candidate for Second Vice President of the SRM. I feel this way, not only because the SRM has been an important part of my life and occupation for the past 30 years, but also because I realize there are so many other dedicated and qualified members from which to select Society leadership.

Rangelands are a kind of land which make up close to half of the land surface of the earth. In addition, there is a range or forage resource associated with managed forest lands throughout the world. The value of these lands and the natural resources they produce will become increasingly important as the need mounts to clothe, feed and provide the other necessities of a growing world population. The Society for Range Management is the professional organization dedicated to proper management and wise use of rangelands and related ecosystems. The thought of the responsibility this entails is sobering.

As an organization, we have come a long way over the past 37 years. There is still a long way to go. The SRM needs to continue and intensify efforts to provide initiative and leadership for range management activities on a broad range of fronts. These include: national and international affairs, research, information transfer, public education, and professional development, to name a few. Only through such efforts can the Society achieve and maintain the status necessary to be highly effective. Some specific areas which I feel need emphasis at this time are: career opportunities, legislative contacts, affiliation with related societies and user organizations, and adaptibility of our profession to take advantage of new technological developments.

The role of the Sections is key to the success of the SRM. Only through active Section programs which are coordinated with goals and objectives of the Society can we hope to accomplish what we desire. Each and every member has a part that he or she can play. The part, big or small, is important to the overall effectiveness of our organization. By pulling together, we can build on past achievements and make the Society for Range Management the recognized and respected leader in management of range resources.

Candidates for Second Vice-President: Miller, Westmoreland

Gary K. Westmoreland
Route 1, Box 3-B Thompson Road
Troy, TX 76579

Born: Meridian, Texas, 1944

Educational Training: BS-Range Science, 1966, Texas A&M University; M.P.A.-Public Administration, 1977, Syracuse University; Graduate study in Range Science-Utah State University; Ecosystem Management Short Course-Colorado State University.

Occupational/Employment: State Resource Conservationist, USDA-SCS, Temple, TX-Responsible for all land treatment for the state of Texas; State Resource Conservationist, USDA-SCS, Casper, Wyoming; State Range Conservationist (SCS), Texas; area and field office range conservationist (SCS), Texas; district conservationist (SCS), Texas; research assistant, Texas Agricultural Experiment Station; research assistant, Texas Forest Service; research assistant, Utah Agricultural Experiment Station.

Activities in SRM: Served as member of the Public Affairs Committee of SRM since 1974; chairman of SRM's Public Affairs Committee 1978, 1979, 1980 and co-chairman in 1981. During the past 5 years, SRM has gained national and international exposure as the professional spokesman for range management. The U.S. Congress now regularly requests SRM's input into various legislative matters and SRM has testified on several key pieces of legislation before House and Senate committees. Was responsible for developing SRM's new policy formulation procedures. Has prepared SRM testimony for presentation before Congress on several issues including: (1) budgets for range research, range extension, range education, and range technical assistance; (2) major legislation affecting range resource use, management and research for the past 8 years; and (3) national agency programs such as RPA, RCA, etc; served as director of the Texas Section, SRM and has served on numerous com-

mittees in both the Texas & Wyoming Sections; has been a member of SRM for 23 years; SRM liaison to multi-association task force (Society for Range Management; National Association of Conservation Districts; National Cattlemen's Association; National Wool Growers; and Public Lands Council).

Membership/Activities: Chairman of Public Affairs Committee 1978, 1979, and 1980 for SRM; member of National Cattlemen's Association, Soil Conservation Society of America, National Association of Conservation Districts, National Wildlife Federation, Wildlife Society, and American Museum of Natural History; presently serving on National Cattlemen's Association Task Forces on 2,4,5-T, RPA, & RCA; member of Alpha Zeta National Agricultural Honor Fraternity; active in church and community programs; member of the Council on Agricultural Science and Technology (CAST).

Other: Author of several professional papers and publications on range management; recipient of Santa Fe Railroad Educational Award, Sears-Roebuck Foundation Award Scholarship at Texas A&M University; named one of the Outstanding Young Men of America in 1975 by the National Jaycees; Outstanding Performance Rating in SCS for Range Conservation Application; consultant in Range Management to the government of Botswana (Africa) in 1978 for the U.S. Department of State; range member of Task Force for the Office of International Cooperation and Development of Nigeria, Africa in 1981; served as range and livestock negotiator for cooperative agreements with Nigerian Government at the U.S.-Nigeria Bilateral Talks in 1981.

Statement of Gary K. Westmoreland

The Society has made tremendous strides in our 36-year history. I would do my best to bring, as your second vice president, a persistence in our efforts to be recognized as the Nation's and the world's spokesman for range management.

The diversity of our membership and its expertise makes SRM uniquely qualified to render assistance to those who own, operate, or manage rangeland and to those who pass laws, appropriate funds, or promulgate rules and regulations affecting range resource use and management.

Having served our Society as chairman or member of the Public Affairs Committee for the past 10 years has made me acutely aware of the need for SRM to carefully, but deliberately, make its positions known. Without the work done by our Society, range research stations would have been closed in large numbers; funds for research, education, technical and financial assistance would have been cut even more drastically than what they have; and public awareness of the importance of rangeland to local, state, and national economies would have been only a dream. Yet while much has been accomplished, much remains to be done.

We need to continue to seek ways SRM can be of more effective service to our members outside of the United States. Moreover, there is a need for new sections in several nations of the world where rangeland is a major kind and use of land.

I firmly believe in and would actively support an accelerated education effort by the Society. We need "to reach out and touch someone"—a lot of someones! Nowhere is this needed more than in the public-at-large. Special attention needs to be given to educating school children, rural and urban residents, and legislators and policymakers at all levels of government in all countries with a range resource. Only when people understand the "whys" of rangeland and range management can we expect them to share the same enthusiasm and dedication that we in SRM have for this most vital natural resource.

Candidates for Directors: Cleary, Cutshall, Fisser, and Ross

Rex Cleary
P.O. Box 1090
Susanville, CA 96130

Born: Sacramento, California, 1931.

Educational Training: University of Nevada, B.S. Degree, 1954; University of Montana, School For Administrative Leadership, 1967; University of Wisconsin, Regional Planning, 1973;

Occupation/Employment: Current: District Manager, Susanville District, Bureau of Land Management; *Previous:* Reared on Nevada Cattle Ranch; Management Trainee for Newhall Land & Farming Co., Newhall, Ca.; Foreman of 2 small Nevada Cattle Ranches; Range Manager, Ely, Nev., BLM District; Chief, Division of Range, Carson City BLM District; Assist District Mgr., Miles City, MT. BLM Dist.; Montana State Range Specialist, Mont., BLM State office; Billings, Mont., BLM Dist. Mgr.

Activities in SRM: National SRM Public Affairs Committee—1974 to 1982; Chairman, Annual SRM Public Affairs Committee-1978; Session Chairman, Oklahoma National Meeting—1976; Presently, member of Nevada and Calif. Chapters.

Membership Activities in Other Organizations: Rotary Club; Elks Club; Blue Key Honor Fraternity.

Other: Present assignment in the Susanville District includes management of the Modoc/Washoe Experimental Stewardship Program which holds promise of long term influence on the way Public Lands are managed.

Statement of Rex Cleary:

My experience and career have spanned 5 states and both the private and federal sector.

My youth and early years after college were devoted to ranching and ranch management.

Earlier stages of my BLM career focused heavily on improving the development of grazing systems in both the Northern Great Plains and the Great Basin.

My current assignment as Manager of the Susanville District has included a focus on improving the planning and implementation process. Notably, it has been my good fortune to share in the management of the Modoc/Washoe Experimental Stewardship Program. The experimentation has produced unusual successes.

The results will be described in detail in a 1985 report to Congress. The report now under preparation, will contain hard-hitting recommendations on how-to capitalize on the experimentation. Opportunity exists for long term beneficial impacts on how rangeland is managed.

The foundation of the experimentation has been the development of participative management techniques and processes suited to rangeland circumstances and

interests. When the techniques and processes are perfected, quality planning with broad endorsement is assured. When quality planning with broad endorsement is achieved, implementation follows easily.

My experience has led me to believe that rangeland management goals and objectives of all interested parties are more compatible and complementary than many realize. The element lacking is unified thrusts to accomplish the parallel goals and objectives.

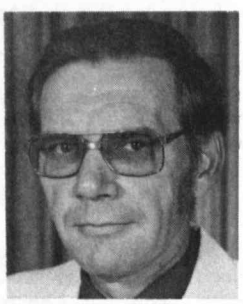
My service to our Society as member and chairman of the Public Affairs Committee for 9 years made me acutely aware of the need for SRM to carefully and deliberately take a stand and make its positions known. To do so will serve as one means for our Society to continue to grow in international stature and effectively influence public policy. And the degree to which the SRM influences public policy is one measure of its success as a professional Society.

To the same end, cumulatively and as individuals, we need to continue to recruit new members, especially ranchers. We all play important roles, but the ranchers are generally the ones who ultimately determine the fate of management and use of most of the rangelands.

The SRM stands for all that is progressive about cooperative and coordinated rangeland strategies. It will continue to lead in the development of better strategies. As we all know, this is no small challenge as societal demands for rangeland products and uses grow infinitely more diverse and complex.

The accumulation of experiences in my career, most recently with the Stewardship Experimentation, have equipped me to make positive and effective contributions to the mission of SRM.

I want to help the Society continue to lead—I can help.



Jack R. Cutshall
3737 Gout St.
Alexandria, Louisiana 71302

Born: Michigan, 1938 (reared in Brazoria County, Texas).

Educational Training: B.S. Range Management, Texas A&M, 1966; Plant Science Short Course, Lincoln, Nebraska, 1978; Certified Commercial Pesticide Applicator-short course and certification, 1981-84; Certified Professional Agronomist (CPAPg) (ARPACS), 1980-84; Working Effectively with Livestock Producers, short course, Texas Christian University, 1983.

Occupation/Employment: Current: USDA-Soil Conservation Service, State Range Conservationist, 1977-Present (Louisiana); *Previous:* Area Conservationist (Louisiana), 1974-77; District Conservationist, 1973-74; Area Vegetation Specialist, 1972-73; District Conservationist, 1968-72; Soil Conservationist, 1967-68; Range Conservationist, 1966-67; USFS Range Technician, 1965.

Activities in SRM: Southern Section-Numerous committees; President, 1977; SRM: Member Producers Affairs, 1977-79, Chaired in 1979; Member Advisory Council, 1976-78; Member Public Affairs, 1980-83, Chairman 1984; Program Speaker-Portland & Calgary Annual Meetings, Session Co-Chairman, San Antonio and Tulsa Annual Meetings; Life Member-SRM

Membership/Activities in Other Organizations: American Registry of Certified Professionals in Agronomy, Crops, and Soils (ARCPACS); Louisiana Cattleman's Association; National Cattleman's Association, Charter Member; National Association of Conservation Districts; Louisiana Pesticide Applicator's Association.

Other: U.S. Army Veteran; SRM member since 1963; SRM liaison to multiassociation task force (SRM, NACD, NCA, NWG, Pub. Land Com.-1979); Editor and featured in video presentation, "Cattle Supplementation in the South" (Produced by WinRock International) ; Received Southern Section "Distinguished Service Award" in December, 1981. Received Southern Section "President's Award" in December, 1982; Received a "Special Achievement Award" from the Soil Conservation Service in November, 1982; Currently establishing my own grazing operation for commercial cow-calf production in central Louisiana.

Statement of Jack R. Cutshall:

The five objectives of the Society are printed in every issue of *Rangelands* and the *Journal of Range Management*. I would like to focus on the second and the fifth objectives. These essentially deal with keeping current, technically, and promoting professional development.

The Society for Range Management (SRM) gives us the opportunity through papers and field trips at our meetings and through our publications to keep abreast of the latest technology. However, the one-on-one discussions with our peers are perhaps the most important "tool" the Society has to offer. Quite often, we tend to visit only with old friends and let the newcomer find his own group; thus, he misses out on a great deal of experience and ideas on the "art" of range management that may not get printed. In my own case, I have learned much by listening to ranchers and experienced technicians and taking the opportunities to ask questions about the art of applied range management.

As a student at the 1965 Annual Meeting in Las Vegas, I had the opportunity, thanks to my major professor in college, to get to know and talk with people (noteably, Vince Duval, U.S. Forest Service; Bobby Ragsdale, Texas Extension Service; and Lew Yarlett, Soil Conservation Service) who had a significant impact in shaping my professional career. Continuing SRM involvement gives me an opportunity to exchange ideas that I use in my current job and on my own livestock operation.

SRM has an obligation, as set forth in our objectives, to provide broadening opportunities to its membership. I feel that we should promote short courses on timely subjects for our members. These could be in conjunction with one of the Society's meetings.

I also think we should provide our students and young professionals more opportunities to get involved and gain from the experience that is available. The Society should insure that new members are encouraged to take advantage of these opportunities.

Last, but not least, I feel that the Society should continue the emphasis of our current leadership to gain visability for SRM as THE authoritative voice for range management and the range resource. By so doing, the range resource will also gain additional recognition.

If we try to do our part to carry out the objectives of the Society, SRM will continue to grow and so will each of us as members.

Herb Fisser
Box 3354 University Station
Range Management Department
University of Wyoming
Laramie, WY 82071

Born: Ames, Iowa, 1926

Educational Training: University of Montana pre-law curriculum, 1947-50; Montana State University, Agriculture B.S., 1958; Montana State University, Range Management M.S., 1961; University of Wyoming, Range Management Ph.D., 1962; Radioecology Summer Institute, Oak Ridge, Tenn., 1963; Oregon State University Aerial Photo Short Course, 1964; Radiological Health and Environmental Monitoring Short Course, Greeley, Colo., 1969.

Occupation/Employment: Current: University of Wyoming, Range Department since 1959, professor. *Previous:* Montana State University Range Management Res. Assoc., 1958; Montana State University Animal Sci. Dept. & Wool Lab. Asst., 1957; Sidney, Montana self-employed farmer/rancher, 1950-1957.

Activities in SRM: Member since 1958 and have attended all winter meetings 1958 thru 1983; Committee memberships: Prof. Affairs; I & E; Nominations; Publications; Council of Section Officers; By-Laws Update Comm.; Comm. on Sections; SRM/Old West Range Management Program Regional Council; SRM Summer Meeting, Laramie, program chairman; SRM Winter Meeting, Casper; Student Affairs Comm., Chairman; *Wyoming Section:* all elected offices; SRM/Old West Range Manage. Program Wyoming Council member; Summer Meetings Plant ID prog.; 1st Ann. Fall Meeting Chairman, many committees.

Membership/Activities in Other Organizations: Ecol. Soc. Amer., INTECOL, Sigma Xi, Gamma Sigma Delta, Alpha Zeta, Colo-Wyo. Acad. Sci., Phi Sigma Kappa, Ecol. Soc. Intern. Sect., Smithsonian Ass., Lutheran Church, Order of Yellow Dogs & Red Rose, listing in Nat'l. Reg. Prom. Amer., Amer. Men Sci., Person. West & Midwest, Marquis Who's Who Inc.: *University Wyoming*: Faculty Senate, Comm. on Student Schol., Prof. Affairs, Intern Student Affairs, Wyo. Range Science Educ. Council, 1963-82 and held all offices, Wyo. Shrub Ecol. Workshop Affairs, and Wyo. Range Science Educ. Council, 1963-82 and held all offices, Wyo. Shrub Ecol. Workshop coordinator.

Other: Married and has 3 children; Univ. of Wyoming Plant Judging Team coordinator; Coach 1960 thru 1981; Univ. teaching Range Plants & Ecology, Poisonous Range Plants, Aerial Photo Interp., Method Sampl. Veg., etc., Director of 51 MS and 16 Ph.D. research programs; research primarily in arid land shrub ecology, phenology, production, productivity; juniper ecology, control, management, reseeding, game range improvement; deer habitat ecology; grazing systems on arid lands; many presentations, SRM & other meetings; many publications and reports of research; 1971 Range Man of the Year from the Wyo. Section; SRM, research development in Kuwait, Saudi Arabia, Libya.

Statement of Herb Fisser:

I felt honored to complete the nomination forms for Director of SRM. I have long advocated the concept of service to the Society. It seems to me, therefore, that the true responsibility of elected officers is to work for the good of the Society, primarily, and express personal philosophy only secondarily, as related to the decision making processes of the Board of Directors.

I feel that all officers must willingly provide whatever time is necessary to obtain cross-section information from membership and vigorously support policy decisions that are clearly necessary for the advancement of the Society and betterment of members. Personal feelings or philosophical concepts should never be overbearing to the good of the organization or the resources we manage and defend.

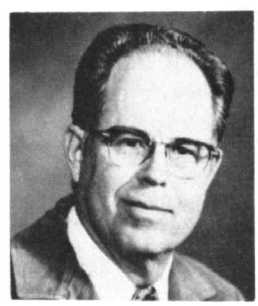
Range management is a term subject to diverse interpretation. To the livestock manager, the forage resource is a dynamic and ever changing heritage. His rangeland harvest with grazing animals provides a significant part of America's red meat. (The low energy input of rangeland produced meat compared to that from intensive feed lot operations in itself offers justification for continued development of improvement oriented grazing systems.) Wildlife use provides both economic and aesthetic values. Habitat utilization often complements ecological potential and multiple use facets of the natural resources.

To federal and state management agency personnel, the rangeland resources are a complex of biotic and abiotic components. Watershed and erosion problems, often seemingly unsolvable, require management strategies which address geomorphic, edaphic and hydrologic site factors, in addition to the relatively simple animal use aspects.

To the researcher, rangelands and all the environmental impinging variables, whether human or naturally induced, are a sometimes bewildering matrix of spatial and temporal interactions. Greater information accumulation often seems merely to present additional multitudes of problems and questions.

The student is faced with endless curricula prerequisites and identification of plant, animal and associated biota. Ecological concepts appear to be derived from complex interactive systems so dynamic that generalization usually seems fruitless.

Well, whatever one's interests or occupation, rangelands foster a love seldom matched in other disciplines. I look forward to continued personal involvement in the SRM, whether elected or not. Our combined efforts are necessary to maintain and protect our rangelands. With the strong voice of our Society, we can. I would be honored to serve as a Director.



Robert L. (Bob) Ross
306 East Story
Bozeman, Montana 59715

Born: Musselshell County, Montana, 1921

Educational Training: B.S. degree, Montana State University, 1949; Interdisciplinary Plant Science training session, University of Nebraska, 1969; participated in approximately 15 National and Regional SCS Range Workshops throughout the western states; Rest Rotation Grazing Systems training session, USFS 1965.

Occupation/Employment: Current: Range Ecology and Conservation Consultant, Book Publishing firm, President. *Previous:* State Range Conservationist, SCS, Bozeman, Montana (28 years with SCS); reared on a cattle and sheep ranch.

Activities in SRM: Member since 1949; Past President and Secretary of the International Mountain section. Chairman of the following parent Society committees: Publicity Committee, 1957; Convention City Selection, 1959; Nomination Committee, 1966; Membership Committee, 1969; Ad-Hoc Membership Committee, 1971; Liaison with SCS and SCSA, 1973; Liaison with Ranchers, 1974; Awards Committee, 1978. Worked on many other committees-both parent Society and local Section. Presented papers or talks at 10 different parent Society annual meetings, chaired several program sessions at parent Society annual meetings, presented papers or talks at 5 different Sections.

Membership Activities in Other Organizations: Rotary International, president of local club; Soil Conservation Society of America; Montana Stockgrowers' Association.

Other: Married and has three children; served as a combat infantryman during World War II in Europe; authored more than 125 technical or practical range management articles or publications; Senior author of the following publications: "Climax Vegetation of Montana Based on Soils and Climate", "Soil and Vegetation Inventory of Near-pristine Sites in Montana", "Range Management for Livestock, Wildlife and Watersheds", "Montana Grazing Guides", "Wild, Edible and Medicinal Plants"; Instrumental in organization and development of the Montana Rangeland Resource Program.

Awards: SRM Fellow; SRM Outstanding Achievement Award; Outstanding Speaker Award at SRM parent Society Convention; Toastmasters International Communication and Leadership Award; 3 Certificates of Merit from SCS; SCS Meritorious Award; Montana Rangeman of the Year Award, 1977; Outstanding National Retired Federal Employee Award, 1978 (1 of 10); Outstanding USDA Retired Federal Employee, 1978; Silver Star, 2 Bronze Stars and Purple Heart during WWII.

Statement of Robert L. Ross

I have been an active and dedicated member of the Society for Range Management since 1949.

I appreciate the fact that SRM is unique as an organization in that it brings all sectors of the rangeland industry together. We learn from one another. The highly trained researchers or educators have as much to learn from the ranchers, in regards to practical application and management, as the ranchers learn technology from the professionals. This, of course, originally was and still is the purpose of the SRM-learning and working together to get sound range management technology applied on the ground.

As a Society and as individual members we must be ever mindful of the important part ranchers and range users play in management of the rangeland resources throughout the world. Their importance is not only to the agricultural sector, but to all the public as well from an economic, livestock production, watershed protection, and aesthetic standpoint.

We must be mindful of the fact that ranchers are usually the end result of range management. They make the decisions and carry out the management practice on private or public lands. Range research, education, technology, etc. is important, but it brings little results until the rancher applies it to the ground. With this in mind, it is essential that as an organization, we strive with special emphasis to increase our rancher membership and participation. If ranchers do not participate in SRM meetings and tours, SRM has little to offer them. In order to interest more ranchers, it is necessary to offer SRM sponsored programs and tours specifically for ranchers.

Ranchers are a proud and independent, self governing people. If they attend SRM meetings, they do so at their own time and expense—which is often more than just the cost of the convention. The few who do attend SRM meetings have much to offer. However, psychologically, they are reluctant to attend meetings where there are overwhelming numbers of federal and state employees.

Until we get a program going that will entice more ranchers, peer pressure will keep them from becoming members and participating in Society affairs.

A few years ago the Liaison With Ranchers Committee arranged for special *rancher* tours and special *rancher* luncheons in conjunction with the annual SRM convention. We had very good response and rancher attendance at these functions.

I feel the Society needs to renew this type of activity to entice and increase our rancher membership. We need to be broad-minded in our thinking and actions and use all methods we can in maintaining and improving our rangeland resources.

We must continue to operate the Society's financial affairs on a sound balanced budget.

We must be politically involved in world-wide problems relating to rangeland resources. If we do not become involved and speak for our profession, decisions will be made by organizations and individuals less qualified.

It is a privilege and a pleasure to be a participating member of the Society for Range Management. I feel highly complimented to be selected as a candidate for the Board of Directors. If elected, I will serve to the best of my ability. If not elected, I still look forward to serving the Society in whatever capacity I may be of service.

Article XII. Endowment Fund

The following By-law amendment has been recommended by the Board of Directors:

1. *SRM Endowment Fund* - There is hereby established and created a fund to be designated The Endowment Fund of the Society for Range Management. The official abbreviation shall be the SRM Endowment Fund.

2. The Board of Directors of the Society shall also be empowered to establish and maintain trust, memorial, scholarship or other types of fiduciary funds as may be deemed necessary or financially prudent for the efficient operation of the Society for Range Management.

3. The SRM Endowment Fund and any other established fiduciary funds shall consist of donations, gifts, devises and bequests directed thereto. These donations, gifts and bequests of personal/real property for the Endowment Fund or other established funds shall be considered the cash principal of the funds.

4. The basic SRM Endowment Funds shall be held in trust in perpetuity and shall be kept distinct from the operating funds of the SRM to assist in accomplishing the purposes of SRM and performance of activities according to the policies as they are set forth in the Articles of Incorporation and these By-laws as amended.

5. The SRM Endowment Fund and any other established fiduciary funds shall be administered by the President, the First Vice President, the Second Vice President and the Executive Vice President, who shall be called the managers. A majority vote of the managers shall control their decision.

6. The managers shall make a full statement of the condition of the SRM Endowment Fund/other established fiduciary funds to the Board of Directors and the SRM membership at the annual meeting of SRM.

7. The rents, revenues and other income of any of these funds shall be devoted, expended and applied to the use and benefit of SRM bearing in mind designations made by the donor.

8. The managers shall administer the investing of these funds in a manner considered to be professionally sound and financially prudent for the stability and continued operation of the SRM.

9. The managers shall hold and retain securities and properties other than cash of the SRM Endowment Fund so long as they are, in the opinion of the managers, sufficiently income producing.

10. The proceeds from the sale of any such securities or other property held in the SRM Endowment Fund shall become a part of the cash principal of the SRM Endowment Fund.

11. The SRM Endowment Fund and any other established fiduciary funds shall conform to the Articles of Incorporation and the By-laws of the Society for Range Management as amended and to Federal and State Laws as they pertain to contributions made to tax-exempt public charities. The Board of Directors shall notify the IRS of the establishment of the Endowment and its status as a public charity.

12. The Board of Directors of the Society must encourage potential contributors/donors to seek tax counseling prior to contributing to any fiduciary funds.

Current Article XII. Amendments will become Article XIII. Amendments)

IT'S RANGE JAMBOREE TIME
at the
1985 ANNUAL MEETING
of the
SOCIETY FOR RANGE MANAGEMENT

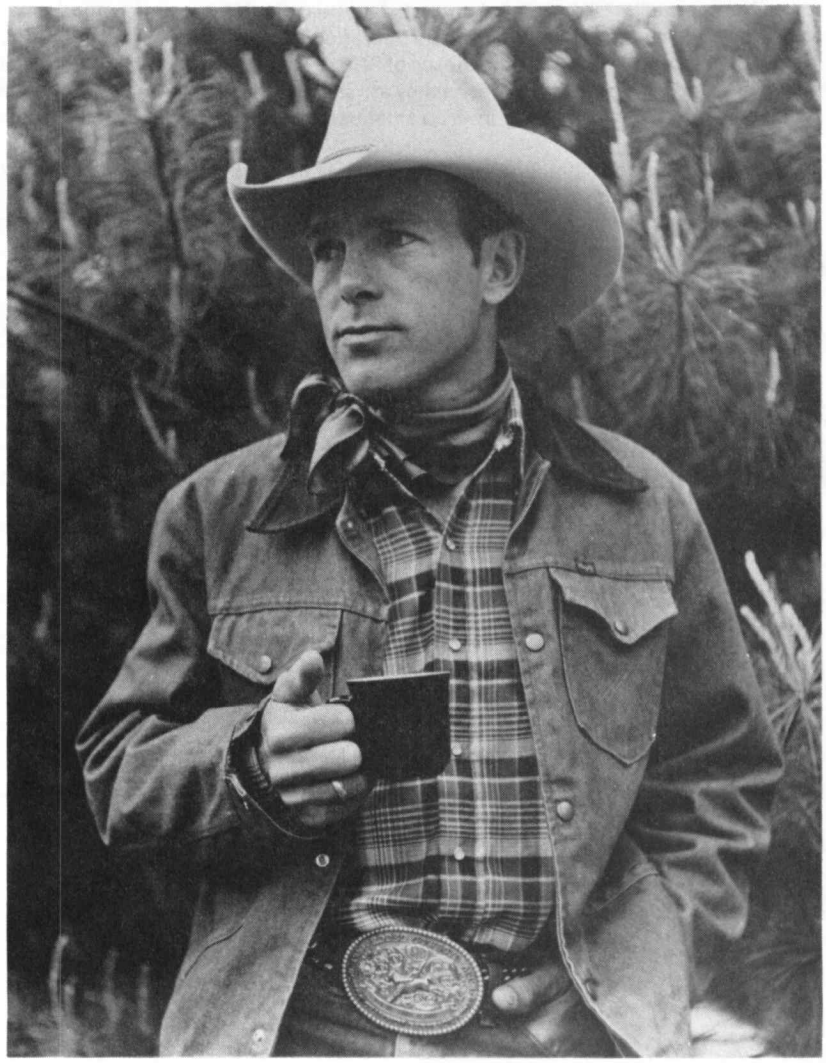
Starring Chris LeDoux!

When you hear Chris sing country-western songs, you know he's "paid his dues." Chris writes and sings AUTHENTIC western songs as he draws on the experiences he's had as 1976 PRCA WORLD CHAMPION bronc rider and full-time Wyoming rancher.

Chris calls his music WESTERN country because each tells a story of some phase of western life. Some are sad – others funny – many are exciting. Listening to his music is like listening to old-time radio, permitting you to "live along" in your mind's eye ... for hours on end.

In twelve years with 16 albums he has taken rodeo and ranch life around the world. About 400 radio stations from Maine to California are playing songs from his various albums.

Chris brings "Big Time" entertainment to the '85 SRM Jamboree!



Join Chris LeDoux and all your friends

in Salt Lake City, Utah ○ February 10–15, 1985

Welcome to Salt Lake City--The Host City

In 1847, Mormon pioneer Brigham Young looked over the Salt Lake Valley and declared, "This is the place." Today, Salt Lake City remains "the place" for a glittering array of activities to make your stay during the '85 annual meeting memorable.

Within walking distance of the Hotel Utah is the Salt Palace, home of the Utah Jazz of the National Basketball Association and the Golden Eagles hockey team. The world-renouned Utah Symphony, Ballet West, the Utah Opera Company, and numerous other dance and theatre groups all have their homes within walking distance. The Crossroads Mall, which is the largest urban mall in the country, and the ZCMI Mall are both across the street from the Hotel Utah. The 25,000-student University of Utah, complete with cultural and sports programs, is a 10-minute city bus ride from the meeting site.

Restaurants of all types, night clubs, and a full variety of shopping experiences await the '85 Annual Meeting participant.

And, of course, the Hotel Utah is across the street from the world famous Temple Square. Here you will have an opportunity to tour the Tabernacle and to hear the Tabernacle Choir, either at their regular Sunday CBS radio broadcast or during their Thursday night rehearsal.

In Salt Lake City, you, too, will feel "this is the place."

North wings of Westin Hotel Utah and Salt Lake Temple

Westin Hotel Utah

SRM Annual Meeting Headquarters

SRM has reserved rooms in Westin Hotel Utah. This is a World-Class Luxury Hotel with unsurpassed convention facilities. It is in the heart of Salt Lake City's shopping and entertainment district and within easy walking distance of the Salt Palace, Utah's Sports Arena. Rooms have also been reserved at the Temple Square Hotel, one block away from Westin Hotel Utah. Complete the reservation form showing which of the two hotels you would like to stay in and return it to Westin Hotel Utah. They will refer reservations to Temple Square Hotel when appropriate.

If lodging reservations at Westin Hotel Utah and Temple Square Hotel equal or exceed the number of reservations being held for meeting participants, SRM will receive meeting rooms free of charge.

The Meeting Program

	10 Feb Sunday	11 Feb Monday	12 Feb Tuesday	13 Feb Wednesday	14 Feb Thursday	15 Feb Friday
Morning	Committee Meetings Vegetative Rehabilitation & Equipment Work Shop (VREW) (8 am-12 noon)	VREW (8 am-12 noon)	Concurrent Technical Sessions (8 am-12 noon)	Membership Meeting (9 am-12 noon)	Concurrent Technical Sessions (8 am-12 noon)	Post Convention Tour
Afternoon	Committee Meetings VREW (1-5 pm)	Plenary Session (1-5 pm)	Concurrent Technical Sessions (1-5 pm)	Concurrent Technical Sessions (1-5 pm)	Concurrent Technical Sessions (1-5 pm)	Post Convention Tour
Evening	SRM Mixer (7-9 pm)	Free Time	President's Reception and Dance (7:30 pm-12 midnight)	Range Jamboree (7-11 pm)	Free Time	

SUNDAY MIXER

Don't miss the Sunday night mixer. We will have a wine and cheese and soft drink hospitality room for registered participants. The nominal cost is $2 — **please add to your pre-registration check.**

RANGE JAMBOREE

Tickets will be at a premium for the Range Jamboree dinner and show starring Chris LeDoux. There will be a limit of 900 seats sold on a first-come, first-served basis. The night will be informal with a western buffet dinner and show. You can hold your place by checking the pre-registration box and adding the evening's cost to your pre-registration check.

SPECIAL EVENTS/CITY TOURS

Sunday—*Skiing at Alta or Snowbird,* 9:00 a.m. to 5:00 p.m. UTA buses available for $6 round trip. Approximate day ski lift prices are: Alta - $12, Snowbird - $14.

Mormon Tabernacle Choir, 9:30 a.m. to 10:00 a.m. Must be seated by 9:15 a.m. Within walking distance of downtown hotels/motels. *Free.*

Monday—*Genealogy Library Tour,* 10:00 a.m. to 12:00 noon (organized SRM tour and film). *Open from 9:30 a.m. to 4:30 p.m. daily except Sunday.* Within walking distance of downtown hotels/motels. *Free.*

Temple Square Tours, 9:00 a.m. to 8:00 p.m. *daily except Sunday.* Within walking distance of downtown hotels/motels. *Free.*

In-city Bus Tour - Orientation of highlights of city, 2:00 p.m. to 4:00 p.m. $6.*

Tuesday—*Solar Housing Energy Conservation Demonstration,* 10:00 a.m. to 12:00 noon. Inside Hotel Utah. *Free.*

Pottery Making Demonstration, 2:00 p.m. to 4:00 p.m. Inside Hotel Utah. *Free.*

Wednesday—*Downtown Historic Bldg. Walking Tour,* 10:00 a.m. to 11:30 a.m. *Free.*

Thursday—*Wendover, Nevada, Casino and Dinner,* 1:00 p.m. to 10:00 p.m. $15 (Price includes transportation and prime rib dinner.)*

Friday—*Student Cross Country Skiing,* 10:00 a.m. to 3:00 p.m. Individual must provide own transportation and any expenses incurred.

Post-Convention Skiing at Brighton or Solitude Ski Resorts, 9:00 a.m. to 4:00 p.m. UTA buses leave every 15 minutes across the street from Hotel Utah beginning at 7:00 a.m. for $6 round trip. Return at 4:00 p.m. to 5:30 p.m.

UTA (city buses) on own--special free bus ride downtown area. Weekly passes are available for $3-$4, which allows you to go anywhere except ski resorts.

*Pre-registration requested. If insufficient interest, will refund money and cancel activity and buses.

TENTATIVE SCHEDULE FOR CONCURRENT TECHNICAL SESSIONS

TUESDAY, FEBRUARY 12

Morning

Symposium: Low Shrub Cold Deserts
Youth Forum (High School Students)
Volunteer Papers
Volunteer Papers
Volunteer Papers
Volunteer Papers
Multi-media Program

Afternoon

Symposium: Low Shrub Cold Deserts (Cont'd)
Rancher Session
Volunteer Papers
Volunteer Papers
Volunteer Papers
Volunteer Papers
Multi-media Program

WEDNESDAY, FEBRUARY 13

Afternoon

University Student Conclave
Symposium: Monitoring Rangelands
International Development Symposium
Range Evaluation Project Session
Volunteer Papers
Volunteer Papers
Multi-media Program

THURSDAY, FEBRUARY 14

Morning

Symposium: Range Plant Improvement
International Development Symposium (Cont'd)
Computer Workshop
Volunteer Papers
Volunteer Papers
Volunteer Papers
Multi-media Program

Afternoon

Symposium: Range Plant Improvement (Cont't)
International Development Symposium (Cont't)
Computer Workshop (Cont't)
Volunteer Papers
Volunteer Papers
Volunteer Papers
Multi-media Program

MEALS

There are numerous fine restaurants of any flavor in Salt Lake City. Many are within easy walking distance of Convention headquarters. Numerous small eating shops and cafes are available in the downtown shopping malls. There is a national, award-winning restaurant in the Hotel Utah.

STUDENT ACTIVITIES

With Utah students actively involved in planning all aspects of the Salt Lake City Meeting we have put together a schedule that will allow you to participate in all student activites and to attend technical sessions and meetings. We are making a special effort to encourage the general membership and the High School Youth Forum delegates to attend the University Student Conclave activities, which include the Plant Identification Contest, the Comprehensive Range Exam, Student Affairs Committee Meetings, Student Conclave Business Meetings, Student/Professional Discussion Session, University Student Paper Presentation (Concurrent Session), and the Student Luncheon. The general membership and the University students are encouraged to attend the High School Youth Forum activities, which include the Youth Forum Get Acquainted Social, the Youth Forum Orientation, the Youth Forum Paper Presentation (Concurrent Session), and the Youth Forum Business Meeting. Student displays must be set up by noon on Monday to allow judging of displays from 3 - 5 P.M. on Tuesday. Display space request forms are being sent directly to all student chapers. A plant exchange room has been set aside for Sunday P.M. and all day Monday. The Student Employment Service will be open all week long.

POST-CONVENTION FIELD TOUR FRIDAY FEBRUARY 15

Buses will leave Hotel Utah promptly at 8:00 a.m. and proceed to Native Plants Inc. where research and nursery production features will be observed at a major western state private company which supplies a wide variety of range shrubs for artificial reseeding. Research activities of and around the Intermountain Forest and Range Experiment Station Shrub Lab in Provo and BYU Campus will be viewed, together with a stop at a mule deer winter range area near Springville, Utah. The field trip will also provide a look at the infamous Thistle slide. This devastating slide blocked the transcontinental railroad and U.S. Highway No. 6 in 1983. Finally, the tour will include a stop at a Gambel oak research area. The field tour will cover around 200 miles round trip and will cost $11, including transportation and a box lunch. Preregistration is requested.

TRANSPORTATION

The Utah Transit Authority (UTA) provides bus service between the airport and downtown Salt Lake City (stops at Hotel Utah) every half hour. UTA also provides service to the ski areas as well as numerous points throughout the city. Hotel Utah has limousine service to and from the airport.

For additional information on things to do and see in Salt Lake City, Utah, contact Salt Lake Valley Convention and Visitors Bureau, 180 South West Temple, Salt Lake City, Utah 84101-1493 or phone 801-521-2822.

UTAH LIQUOR LAWS

Utah liquor laws may be different from those you are familiar with, but you'll find them less complicated than you might expect. All All package agencies (where liquor is not consumed on the premises) are closed on Sundays and holidays.

Many restaurants and hotels are licensed to sell mini-bottles and "splits" of wine. This is a do-it-yourself proposition, requiring the customer to purchase the liquor personally, then return to the table to order mixer or "setups." Liquor purchased at a restaurant liquor store must be consumed on the premises in conjunction with a meal.

There are many private clubs in Salt Lake where cocktails are served; some have two-week memberships available for guests who are sponsored by a member. Many restaurants and private clubs offer liquor service on Sunday.

Beer is available at most restaurants, grocery and drug stores seven days a week in the Salt Lake area.

HOTELS/MOTELS - SALT LAKE CITY, UTAH

Hotel/Motel	Address	Phone (801)	Room Rate (Plus Tax)	Distance from Ho Utah (City Block
Westin Hotel Utah	South Temple & Main	531-1000	$49 sgl, $64 dbl ($15 ea add. person)	0
Hotel Temple Square	75 W. South Temple	355-2961	$30 sgl, $38 dbl ($8 ea add. person)	1
Howard Johnsons	122 W. South Temple	521-0130	$38 sgl, $43 dbl	1
Mariott	75 S. West Temple	Toll Free 800-228-9290	$69 sgl, $84 dbl	2
Shilo	206 S. West Temple	Toll Free 800-222-2244	$39 sgl, dbl, tpl, quad	3
Travel Lodge Salt Palace	215 W. North Temple	Toll Free 800-255-3050	$34 1 bed 1 person $43 2 bed 4 people	2
Travel Lodge Salt Lake	144 W. North Temple	533-8200	$38 1 bed 2 people $54 3 bed 6 people	3

Be sure to mention you are attending the SRM Meeting when making room reservations!

REGISTRATION

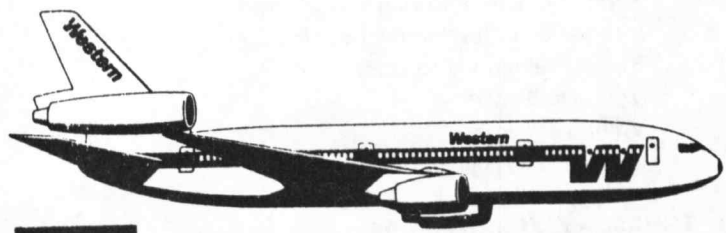
This year you can again save money and make the annual meeting more convenient for yourself by pre-registering. You will also save the annual meeting committee a lot of extra work.

Pre-registrations received before January 4, 1985, will save you $20 on a regular registration and $10 on a student registration. There are also savings for spouses for both types of registration. There will be no refunds made after January 25, 1985. All refund requests must be in writing.

There are two separate registration forms provided on the following page -- one for regular members and one for student members. Please, only one regular member or one student member per form. The forms can be duplicated. Also, students, be sure to check any special student activities you plan to participate in.

Registration forms should be sent to *Dave Mann, Registration Chairperson, P. O. Box 11880, Salt Lake City, Utah 84147-0880.*

Participants at the '85 Annual Meeting are responsible for their own hotel reservations. For those planning to stay at the convention headquarter's hotel or Temple Square Hotel, a reservation form is provided. Mail reservation form (or call) soon to secure lodging.



Western Airlines

OFFICIAL CARRIER FOR 1985 SRM
SALT LAKE CITY MEETING

WESTERN AIRLINES is offering a special discount of 40% off regular adult round-trip coach fares for travel to the SRM Salt Lake City meeting. These low fares will be available for travel between February 6 - 23, 1985 (excluding February 18, 1985). Your discount will apply at the time your ticket is issued, thus we encourage you to book early and purchase your tickets, as air fares are continually on the rise. Tickets can be issued by Western Airlines or any retail Travel Agent.

For reservations and low fare information, please contact Western's toll free numbers: 1-800-426-5249, U.S., Alaska and Hawaii, and 1-800-562-5070 Washington State. When you call Western Airlines, please identify yourself by mentioning the name of your meeting and the IDENTIFICATION CODE BSE 037.

Count on WESTERN AIRLINES for your flight to Salt Lake City.

SRM 1985 ANNUAL MEETING * SALT LAKE CITY, UTAH * 10-14 FEBRUARY 1985

Name: _____

Address: _____

Affiliation: _____

E-REGISTRATION (Before January 4, 1985):	Pre-Registration	Registration After Jan. 4	Cost Per Row
Member	$35.00	$55.00	_____
Spouse/Guest	$15.00	$20.00	_____
Non-member/Speaker		$55.00	_____
Day Only	$10.00	$10.00	_____

CKETS TO SPECIAL EVENTS:		Cost Per Person	Number of People	Cost Per Row
SUNDAY:	SRM Mixer	$2.00	_____	_____
MONDAY:	In City Bus Tour	$6.00	_____	_____
WEDNESDAY:	Range Jamboree	$17.00	_____	_____
THURSDAY:	Wendover, Nevada	$15.00	_____	_____
FRIDAY:	Post-Convention Range Tour	$11.00	_____	_____

TAL AMOUNT DUE. _____

RECEIPT MEMO
(Please fill in your name and amount)

NAME: _____

PRE-REGISTRATION:

Member	$_____
Spouse/Guest	$_____
Non-Member/Speaker	$_____
Day Only	$_____

TICKETS:

SRM Mixer	$_____
In City Bus Tour	$_____
Range Jamboree	$_____
Wendover, Nevada	$_____
Post-Convention Range Tour	$_____

AMOUNT: $_____

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* STUDENT MEMBER * * *

* * * REGISTRATION FORM * * *

SRM 1985 ANNUAL MEETING * SALT LAKE CITY, UTAH * 10-14 FEBRUARY 1985

Name: _____

Address: _____

Affiliation: _____

E-REGISTRATION (Before January 4, 1985):	Pre-Registration	Registration After Jan. 4	Cost Per Row
Student Member	$20.00	$30.00	_____
Spouse/Guest	$15.00	$20.00	_____
Non-member/Speaker		$30.00	_____
Day Only	$10.00	$10.00	_____

CKETS TO SPECIAL EVENTS:		Cost Per Person	Number of People	Cost Per Row
SUNDAY:	SRM Mixer	$2.00	_____	_____
MONDAY:	In City Bus Tour	$6.00	_____	_____
WEDNESDAY:	Range Jamboree	$17.00	_____	_____
THURSDAY:	Wendover, Nevada	$15.00	_____	_____
FRIDAY:	Post-Convention Range Tour	$11.00	_____	_____

TAL AMOUNT DUE. _____

UDENTS, PLEASE CHECK IF YOU PLAN TO PARTICIPATE IN THE FOLLOWING:

nday's Comprehensive Range Exam: ___ Friday's cross country ski tour: ___

sday's free student luncheon: ___ Week's Youth Forum - Male ___ or Female ___

* * * RECEIPT MEMO * * *
(Please fill in your name and amount)

NAME: _____

PRE-REGISTRATION:

Student Member	$_____
Spouse/Guest	$_____
Non-Member/Speaker	$_____
Day Only	$_____

TICKETS:

SRM Mixer	$_____
In City Bus Tour	$_____
Student Luncheon	$ Free
Range Jamboree	$_____
Wendover, Nevada	$_____
Post-Convention Range Tour	$_____

AMOUNT: $_____

SOCIETY FOR RANGE MANAGEMENT Feb. 9-15, 1985

ROOM RESERVATION REQUEST

Main at South Temple, Salt Lake City, Utah 84110 (801-531-1000)

(SEND TO HOTEL)

LAST NAME _____ FIRST _____ INITIAL _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

ORGANIZATION/FIRM _____

I will be arriving on _____ (DAY / DATE) and leaving on _____ (DAY / DATE)

CHECK-IN TIME IS 2:00 PM CHECK-OUT TIME IS 12:00 NOON

Should you be making your reservation without this form it is necessary that you mention the name of your group in order to secure special rates and accommodations.

Please reserve the following. (Circle rate requested & Number of Beds Required)

	HOTEL UTAH	TEMPLE SQUARE	
SINGLE OCCUPANCY	$49	$30	_____
DOUBLE (2 PERSONS)	$64	$38	1 Bed or 2 Beds
SUITES	$125 and $170	---	1 Bed or 2 Beds
EXTRA PERSON	$15	$15	

(All rates subject to the applicable taxes)

All requests must be received 14 days prior to the starting date of meeting. Reservations received after that date are confirmed subject to availability of space and will be charged at regular rates which may be higher than those listed above.

PHONE NUMBER (____) _____

RESERVATION GUARANTEE POLICY

HOTEL UTAH is pleased to confirm your reservations. Reservations are held until 6 p.m. unless GUARANTEED and are subject to failure of guests to vacate or conditions beyond our control.

A guaranteed payment assures you that a room will be held until check-out time on the day following your scheduled arrival. If a room is not available, every effort will be made to relocate you at another hotel with comparable accommodations and we will arrange and pay for the first night's lodging, one three-minute long distance telephone call and transportation to another hotel.

You will be billed for the first night's lodging if guaranteed reservations are not cancelled before 6 p.m. (Mountain Standard Time) on the day of arrival. The hotel will issue a cancellation number whenever a guaranteed reservation is cancelled.

Rates are subject to change without notice.

GUARANTEE INFORMATION

☐ Bill My Organization/Firm.
(Address must be indicated on this form)

CREDIT CARD: ☐ VISA ☐ MC ☐ AX ☐ CB ☐ DINERS

CARD NO. _____

EXPIRATION DATE _____

_____
SIGNATURE

The Trail Boss ©

* * * RECEIPT MEMO * * *

REGULAR
PRE-REGISTRATION

SRM 1985 ANNUAL MEETING
SALT LAKE CITY, UTAH
10-14 FEBRUARY 1985

REGULAR
PRE-REGISTRATION

SRM 1985 ANNUAL MEETING
SALT LAKE CITY, UTAH
10-14 FEBRUARY 1985

Please send form to:
(Pre-registration closes January 4, 1985)

David K. Mann
Registration Chairperson
P.O. Box 11880
Salt Lake City, Utah 84147-0880

Please complete the reverse side and enclose check or money order in the proper amount to SRM Annual Meeting (all amounts are in U.S. funds or equivalent). NO REFUNDS AFTER JANUARY 25, 1985. (ONLY BY WRITTEN CANCELLATION).

The Trail Boss ©

* * * RECEIPT MEMO * * *

REGULAR
PRE-REGISTRATION

SRM 1985 ANNUAL MEETING
SALT LAKE CITY, UTAH
10-14 FEBRUARY 1985

STUDENT
PRE-REGISTRATION

SRM 1985 ANNUAL MEETING
SALT LAKE CITY, UTAH
10-14 FEBRUARY 1985

Please send form to:
(Pre-registration closes January 4, 1985)

David K. Mann
Registration Chairperson
P.O. Box 11880
Salt Lake City, Utah 84147-0880

Please complete the reverse side and enclose check or money order in the proper amount to SRM Annual Meeting (all amounts are in U.S. funds or equivalent). NO REFUNDS AFTER JANUARY 25, 1985. (ONLY BY WRITTEN CANCELLATION).

Program: Development and Production of Plant Materials

Sunday, February 10

8:00 - 8:15 INTRODUCTIONS

8:15 - 8:45 Keynote Address: Development and Use of Plant Materials
Dr. Howard Stutz, Brigham Young University, Provo, Utah

Panel Discussion and Review
Wendell Hassell - Panel Moderator - USDA Soil Conservation Service, Denver, Colorado

8:45 - 9:05 Selection and Development of Plant Materials - an Overview of Current Activities
Dr. Durant McArthur, USDA-Forest Service, Provo, Utah
Mr. Wendell Oaks, USDA-Soil Conservation Service, Los Lunas, New Mexico

9:05 - 9:25 Testing and Release of Plant Materials
Mr. Wayne Everett, USDA-Soil Conservation Service, Fort Worth, Texas

9:25 - 9:45 Acquisition, Storage, and Distribution of Plant Germplasm
Dr. Lewis Bass, USDA-Agriculture Research Service Fort Collins, Colorado

9:45 - 10:05 Seed Certification and Quality Standards
Dr. Roger Danielson - Oregon State University Corvallis, Oregon

10:05 - 10:25 Commercial Seed Production and Sales of Species for Revegetation
Art Armbrust - Sharp Brothers Seed Co. - Healy, Kansas

10:25 - 10:45 Questions and Discussion

Sunday, February 10

8:00 - 8:15 Introduction

8:15 - 10:45 Development and Production of Plant Materials

10:45 - 11:45 Long Range Climate Predicting

11:45 - 1:15 Lunch

1:15 - 2:15 High Elevation Aerial photography

2:15 - 5:00 Workgroup Reports

Monday, February 11

8:00 - 12:00 noon Workgroup Reports

Grass. Stirrup-high and far as the eye could see. That's the way it was. That's the way it can be.

When the first ranchers pioneered Texas and Oklahoma they were greeted by grassland. Ranging for miles and waving a welcome to the strong-spirited ranchers and their grazing herds.

When the land was all taken, it was not all taken care of. It was fenced and overgrazed. It was parched by the dry years, and invaded by deep-rooted and "drouthy" brush. Brush destined to invade nearly every ranch, and to cut in half the grazing potential of over 88 million acres.

But there's a new pioneer spirit among ranchers today. They want their land back from the brush...and back to its natural beauty and bounty.

And there's a new product that makes it practical. It's Graslan™ from Elanco. Graslan is a new approach to brush control. It's as revolutionary and unique as were three other Elanco products—Tylan® and Rumensin® for your cattle and Treflan® herbicide for soybeans and cotton.

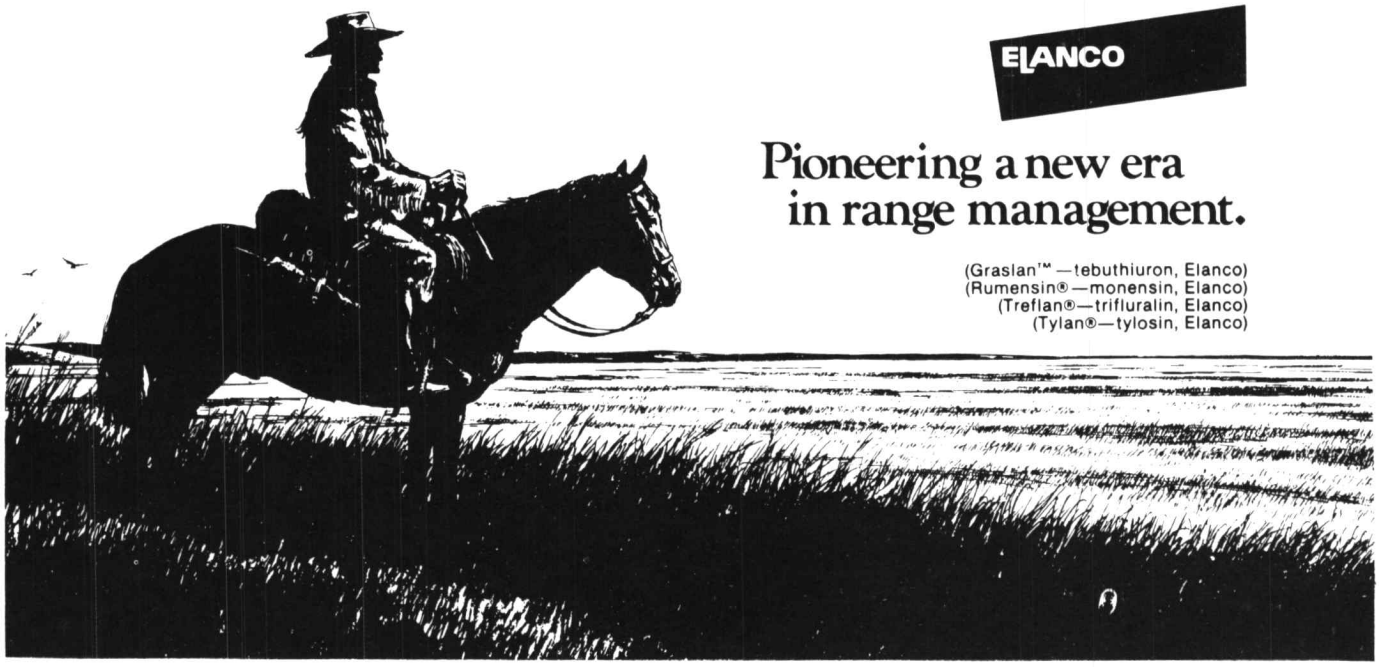
To find out more about brush control with Graslan, talk to your local SCS, Extension Agent or Range Management Specialist. Or call the toll free Elanco hotline: 1-800-428-4441. It could be the most important call you'll make for years to come.

Elanco Range Products
Elanco Products Company
A Division of Eli Lilly and Company
Indianapolis, Indiana 46206

ELANCO

Pioneering a new era in range management.

(Graslan™—tebuthiuron, Elanco)
(Rumensin®—monensin, Elanco)
(Treflan®—trifluralin, Elanco)
(Tylan®—tylosin, Elanco)



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