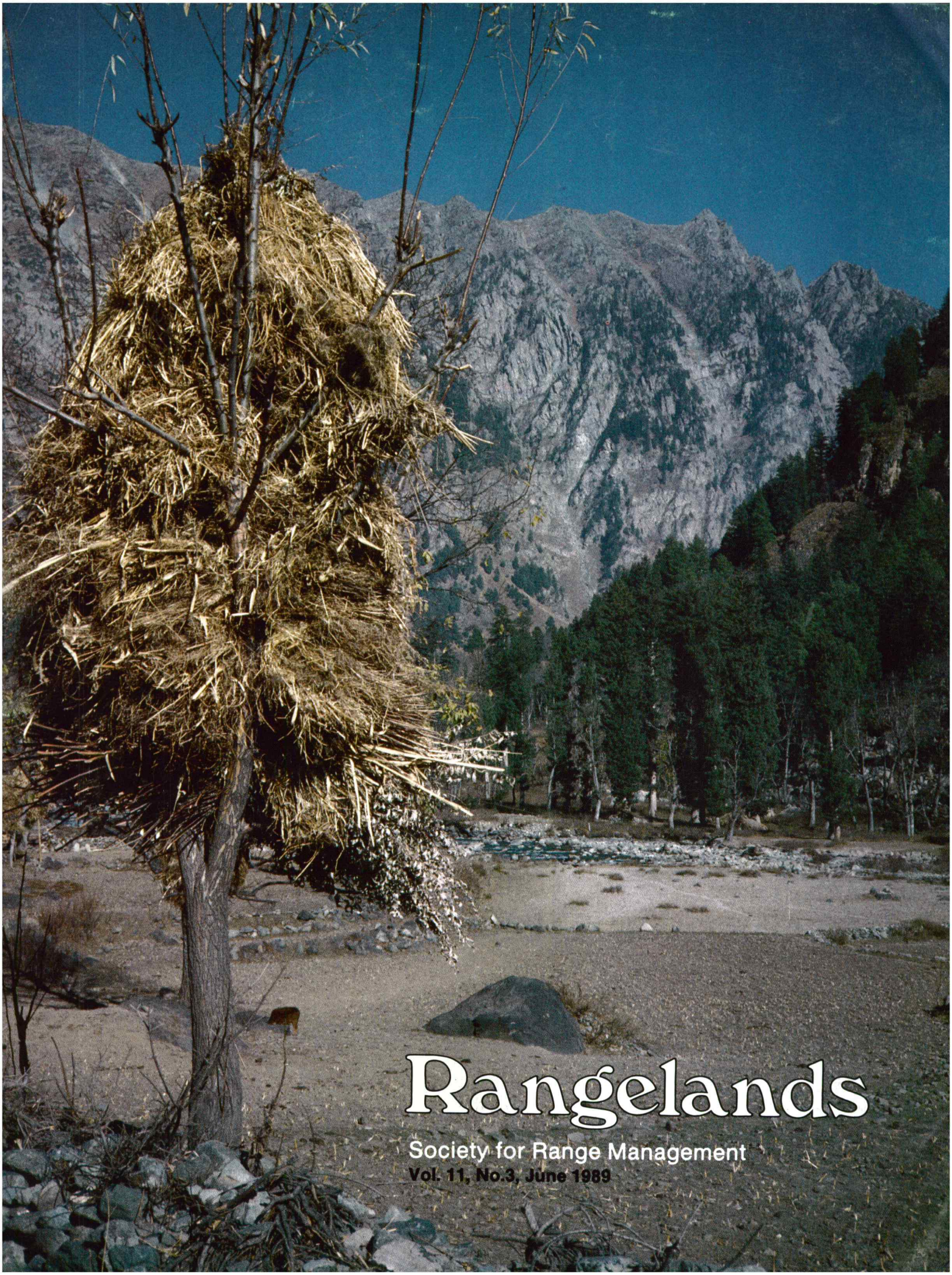

Rangelands

Society for Range Management
Vol. 11, No.3, June 1989

Rangelands

Volume 11, No. 3
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FEATURE ARTICLES

DEPARTMENTS

COVER PHOTO

FRONT: Fodder storage in the foothills of the Himalayas. Lower branches cut from the tree form a base to hold fodder above the snowline and the reach of some animals. Photo by Bill Laycock
BACK: Livestock trailing to a village, Pahlagam, India. Photo by Dennis Phillippi. See article on page 101.

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—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;

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Viewpoint: A Solution for 1996—and Beyond

J.S. Murphy

BROADLY SPEAKING, THE CONSERVATION Reserve Provision (CRP) of the 1985 Food Security Act (FSA) has two major goals. The first is to reduce national crop commodity surpluses by controlling farm production. The second is to reduce soil erosion and water quality problems arising from farming marginally suited lands (Goetz 1988).

Whether or not these goals will be reached over the long term is still open to speculation. Similar past CRP and set-aside programs have not been successful in achieving very similar objectives. For example, the 1956 Soil Bank Act and its Conservation Reserve Program failed in the final analysis to both divert land from crop production and keep marginal farmland in permanent cover (Laycock 1988). The program goals and subsidy structure of the Soil Bank CRP and the FSA—CRP are similar in many respects. Hopefully, their epitaphs will be different. Perhaps only the strength of our desire not to repeat history will make that so.

Over 45 million acres were targeted for enrollment in the 1985 FSA-CRP. The U.S. Department of Agriculture is now preparing to make $1.2 million in subsidy payments for lands enrolled in the program between 1986 and 1988. It should be no surprise then, considering those staggering figures, that the most commonly asked questions in agriculture and natural resources conversations today relate to the fate of CRP lands. Will they be plowed and farmed again? Should they be? And if they should not be plowed, what can be done to prevent that from happening? The taxpaying public has a substantial monetary investment in the CRP, especially when one considers the huge federal budget deficit, other pressing domestic concerns, and the dismal record of past CRP-type government programs. Taxpayers should not be too anxious to see this large investment in soil and water conservation disced under seven years from now.

THE DETAILS OF THE NEXT FARM BILL are now being considered. This may be our best chance to secure our investment in the CRP. It is encouraging to note that despite the great diversity of groups and individuals involved in the drafting process, all want to devise some way to keep the CRP-enrolled acres in grass long after 1996. The big question is how to most effectively, and fairly, accomplish that goal.

The most efficient way that the new Farm Bill can keep marginal farmland in permanent cover after 1996 is through a carefully designed economic incentive package. This incentive package should be designed to accomplish two general objectives. First, it must **encourage** landowners to maintain CRP grass stands by helping develop them in such a way as to produce an income source. Second, it must **discourage** myopic plowing for farming purposes.

REGULATIONS, PROHIBITIONS, subsidies, and special taxes are the four tools at our disposal to reach these objectives (Seneca and Taussig 1974). We probably agree that regulation and prohibition are unpopular and are often viewed as inefficient and unnecessary forms of government meddling in private enterprise. Fortunately, the new farm package does not need to regulate or prohibit behavior to make the CRP a success long after 1996. Instead, this legislation simply needs to send appropriate signals to the economic marketplace so that behavior will directed in the desired fashion. An incentive package composed of subsidies and special taxes could achieve exactly that and cause the FSA-CRP to succeed where the Soil Bank Act CRP failed.

LET US EXAMINE THE SUBSIDY side of the question first. Subsidies should be made available to ease the transition from past farming activities on CRP-enrolled acres to other activities that encourage the maintenance, enhancement and long-term stability of the newly established permanent cover. When farmers originally submitted bids, the understanding was that that land could come back into production after 1996. Now we are reversing our position by saying that these lands should not come back into production. To be fair, some assistance should be provided so that farmers can get out of the business of farming marginal land by 1996 and undertake enterprises that compliment the seeded cover. In other words, the message sent to the landowners through these subsidies must be clear and strong: "Society does not think it wise to farm erosive lands. We will no longer subsidize this type of behavior. Because we know that this creates a hardship, we are willing to help you make the transition to production enterprises that use resources in a wiser fashion."

The distribution of these special subsidies should be specific. Monies should be made available for water developments, fencing, and other range improvements on a cost-share basis for all land now in CRP. This will encourage the development of CRP seedings for livestock, wildlife, and other range-related uses, In addition, no payments of **any kind** should be made for activities that encourage plowing or farming on land in CRP if that land

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is rated in capability classes III-VIII. Class III land provides a workable lower limit for subsidy distribution. Lands in class III have severe crop and soil limitations for farming and those restrictions become progressively greater as the class number increases. This limitation produces the secondary benefit of forcing money for farm programs to lands in capability classes I and II which are best suited for cropping.

AT THE HEART OF THE NEW FARM BILL must be a clear recognition by all that plowing marginal farmland creates costs that are not immediately borne by the individual landowner but by society as a whole. Economists refer to these social costs as *externalities.* Externalities are costs created by the production of a good or service that are not borne by the manufacturer of that good or service (Seneca and Taussig 1974, Stroup and Baden 1973). It is fine to subsidize the initial reconversion of marginal farmland to permanent cover, but to continue to ask society to pay to maintain grass stands after 1996 is both unrealistic and unfair. Many problems associated with soil erosion and lowered water quality as a result of farming marginally suited ground are externalities. They are created by the individual producer but are borne by all society. The solution to this type of problem is to transfer those costs back to the individual offender and thereby internalize external costs.

We could continue to "bribe" landowners, as we are now with CRP payments, not to farm marginally suited lands after 1996. But by doing that, are we sending the right message to the market—and to landowners? Subsidy payments make certain statements about resource ownership. For example, if you pay me a bribe not to smoke a cigar in your presence because the smoke is irritating, then the implicit message is that I own all property rights to the air we both breathe. But if I own the air, then I have the right to pollute it (ignoring the question of environmental responsibility). The best outcome that you could expect is that I accept your bribe (a subsidy) not to exercise my right.

AS IT NOW STANDS, by the end of 1996 society will have paid landowners collectively a bribe of several million dollars not to exercise **their right** to cause soil erosion, lower water quality, and create other related problems. The value of agriculture to this nation notwithstanding, is it right that a private party be allowed to impose these kinds of costs on society and then expect the taxpaying public to "pick up the tab" for the damage? If society is willing to help landowners retire fragile land and convert to less resource damaging production enterprises, it seems to me that landowners owe society similar consideration.

I am not suggesting that plowing marginal land or CRP seedings to grow crops should be prohibited. In fact, let landowners do exactly that if they are determined. On the other hand, these people must recognize the social costs of their actions and be held accountable. This could be accomplished by imposing a special tax, say a marginal farmland plowing tax. The tax would apply not only to land now in the CRP, but to other fragile land as well.

Compared with a subsidy payment, the imposition of a special tax conveys a completely different message about resource ownership. Let me use the smoking example again to illustrate my point. If this time you tax me for smoking instead of paying me not to smoke, the implicit message is that air is a commonly owned resource. Smoking degrades the quality of that resource and I am forced to compensate all air users (owners) for the damage. By imposing the tax, the social costs of resource misuse are recognized and compensated.

Theoretically, the amount of this plowing tax would equal the social costs of soil erosion and water quality problems created by the offender (Seneca and Taussig 1974). The increased, but more realistic, production costs now incurred by landowners as a result of the tax would provide a strong economic deterrent to plowing fragile land.

IT WOULD BE DIFFICULT, IF NOT IMPOSSIBLE, to determine the actual social costs of farming marginal land. But the tax could be set as a percentage of the original bid price for CRP acres. It should be made high enough to discourage plowing to produce an agricultural crop (this excludes range seedings) and account for revegetation costs, but not so high that it becomes a *de facto* plowing prohibition. Like subsidies, the tax would be imposed only on lands in capability classes III through VIII. Classes I and II would be exempt. In fact, land capability classes might even form tax brackets; the higher the capability class number, the greater the tax imposed and the greater the deterrent to plowing for farming purposes.

While the imposition of a special tax sounds harsh, there are some real benefits. Landowners would be forced to carefully consider whether plowing a CRP grass stand or native range is the best use of scarce resources. There would be a strong economic, as opposed to regulatory, disincentive to farm marginal ground. The tax will also prevent new fragile land from being plowed if and when commodity prices rise after 1996. This was ultimately the fate of many Soil Bank grass stands during the 1970's (Laycock 1988). Money produced through the tax could be used to fund other agricultural programs. Society would be reimbursed for at least a portion of its tremendous investment in the CRP and soil and water conservation. And as important, society would be sending a long overdue message to landowners and others who misuse natural resources: The social cost of resource misuse will be paid for by the offender.

Many details of the approach that I have proposed here need to be worked out. Impacts on other programs must be assessed. Still, I believe that the basic concept is a sound one. A properly structured economic incentive package, which includes special taxes, is a solution. I will admit that the idea of tax incentives in agriculture is a radical departure from past practice. But then, gas-

guzzler taxes on fuel inefficient automobiles and effluent taxes charged to polluters were radical departures when they were imposed. Whatever form the next farm bill takes, it had better answer this important question: How many more times do we have to fund conservation reserve-type programs before we treat problem causes and not the symptoms?

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A story about India's rangeland

Mr. Bansi Dahr "One Man Among Millions"

Dennis R. Phillippi

In India, the Department of Soil Conservation is set up by local area districts or directorates. The northern directorate covers the Jammu and Kashmir Districts. Organizationally, the district is headed by a director who supervises and coordinates the work of several technical scientists. This is where Bansi Dahr lives and works.

Bansi Dhar began working for India's Department of Soil Conservation in 1967. Since about 1971 he has worked with and studied the nomadic and seminomadic movements of the "herdsmen" to the summer pastures and between mountain ranges and narrow valleys of the Himalayas.

According to Bansi, about 1/2 million nomads move 4 million sheep, cattle, goats, and some buffalo from the low subtropical winter range to the high mountain alpine summer pastures and back each year. Although the nomads traditionally use the government forest land, they are required to pay a grazing tax. Nomads winter the livestock in the subtropical zone of Jammu (Novem-

Mr. Bansi Dahr discussing routes of the Nomadic herders near Aru Kashmir, India.
Photo by Dennis Phillippi

Author is State range conservationist, Soil Conservation Service, Bozeman, Montana

ber through March), move the herds through the temperate zones including passing through the Kasmir Val-ley (limited to 10 days), up the slopes to reach the alpine pastures by July, remain there until August or September, and start the descent toward the winter range in September and October. Herd boys are often hired to watch and care for the animals during the year. One boy can care for about 2,000 sheep or their equivalent of other livestock and is paid 100 to 200 Rs/year (approximately $15.00).

While in India in November 1988 I had the opportunity to travel with Bansi Dahr to three areas where his influence and guidance is changing the attitudes of people toward range conservation. In Northern India, the first area visited was the mountain grassland development demonstration near Aru, 11 km north of Pahalgam, Kashmir, India. The elevation at the demonstration site is about 2,500m, soils are loamy, and precipitation is about 600 mm. The project was set up to demonstrate the value of grazing deferment and the introduction of other forages.

Progress is impressive and the concepts are being extended to the nomadic herdsmen through the efforts of Bansi Dhar and others working on the project. Bansi says that change has not come easy. He related the story of obtaining confidence of the nomadic people before convincing them of the value of the demonstration. One of the nomad women brought her young child and threw him on the ground at Bansi's feet and said she would kill the child if he persisted in putting in the demonstration plots. Eventually, a Moslem priest took the "Holy Book" and Bansi took an oath promising that the demonstration project "would not ruin their forage supplies." The first attempt in erecting a fence to enclose the demonstration plot ended in destruction. The posts were pulled up, piled, and burned and the wire rolled up and thrown down a gulley. Finally, the exclosure fence was erected by the Soil Conservation workers at the project. The long hard effort finally paid off and the project is now testing a variety of forages and demonstrating the value of range management.

Besides the forage improvement demonstrations, the Department of Soil Conservation helped build shelters for the nomads in the high country and helped stabilize the treacherous mountain routes—road or path construction. Bansi said that herdsmen had to carry their livestock on their backs to get the animals safely across some of the deep ravines and narrow trails on the mountains.

The second area we visited was the Karewas project located about 60 km west of Srinagar near Armintar at an elevation of 1,900m. The Department of Soil Conservation initiated the project in 1980 with forage introductions in 1981. Nearly three feet of snow covers the ground at the study location each winter. Forage introductions and native species were planted on terraces along the hillside with four replications or blocks. Species being tested are:

Grasses:	**Legumes:**
Phalaris tubroso Harding grass	*Coronilla varia* Crown vetch
Festuca arundinacea Tall fescue	*Trifolium ambigum*
F. rubra Red fescue	*T. pratense* Red clover
Bromes innermis Browse grass	*Melilotus officinalis* Yellow sweet clover
B. uniloides Prairie grass	*Onobrychis viciafolia* Sanfoin
Agrostis spp. Bent grass	*Medicago sativa* Lucerne
Dactylis glomerata Orchard grass	*Vigna sinensis* Cowpeas
Phleum pratense Timothy	*Lotus padanculatur* Birdsfoot trefoil

Also planted on the study area hillside are poplar trees *(Populus ciliata).* Several other species identified in the area were astragalus *(Astragalus grahimionus)* and a mint *(Sativa thyma).*

Ecologically, heavy grazing usually converts the bunchgrasses into sod forming grasses such as bermuda grass *(Cynodon dactylon).* Following sufficient rest from grazing, the grasses will proceed in succession to bluestems (*Bothriocloa* spp.) and other bunchgrasses *(Chrysopogon fulvus).*

According to Bansi, harding grass *(Phalaria tubroso)* was much easier for acceptance from the livestock owners, especially the nomads, because it grows taller than the red fescues *(Festuca rubra),* even though the latter would be nutritionally superior.

Several varieties and/or genetic variations were being tested for some of the species listed above. For instance, *Trifolium ambigum* plantings are made for the typical variety and the diploid and tetraploid genotypes. Native grasses prevalent on the area were bristle grass *(Setaria viridis)* and bluestem *(Bothriocloa petusa).*

In the low, subtropical winter range, several fodder shrubs and grasses have been planted such as lantana (*Lantana* spp.), woody legumes (*Acacia* spp.), and bristle grass (*Setaria* spp.). On the temperate mountain ranges, grasses (*Oryzopsis* spp.), fodder shrubs *(Indigofera gerardiana),* and herbaceous legumes such as white clover *(Trifolium repens),* have been established in an effort to provide additional forage.

Soil Conservation in Rangil Watershed

The third area we visited was the Rangil project located about 15 km north of Srinagar on south facing slopes overlooking Kashmir Valley. Forest regeneration started in 1981 with the planting of black locust *(Robbinia pseudoaccocia)* in rows along terraces with 1.5 m × 2 m spacings. Three years later, conifers, mainly *Cedrus deodara,* blue pine *(P. walichiana),* and junipers (*Juniperus* spp.), were planted between the black locust rows. Centerious (*Ailanthus* spp.) was planted on the hillside.

Grazing was prohibited from the watershed rehabilitation and forest regeneration project from time of initiation. However, hand harvest collections of the forage may be permitted in the future. The waste of forage on these areas is criticized by some of the local community people; however, the "locals" recognize the forage yields have been increased and soil erosion had decreased because of the increase in plant cover.

Prior to the project the grass cover was very sparse with sod

forming bermudas and *Chrysopogon echinulatus* predominating. However, after seven years, good establishment of *Pennisetum* spp., a mid-successional grass, was noted over the hillside. Also, *Themeda anathera* considered the highest-successional grass in that area was scattered throughout the watershed.

The accomplishments of Bansi Dahr's efforts are impressive.

Reflections

Tremendous opportunities exist for technical assistance in soil, range, and forest conservation in developing countries. The work of India's Directorate of Soil Conservation serves as an excellent example of what can be accomplished.

Dahr is "one man among millions" in a land where civilization has existed for several thousand years and where rangelands have deteriorated beyond one's imagination. The constraints for Bansi are different than what North America faces. Our limitations are mostly what we place on ourselves, our group, agency, etc. North Americans are blessed with an abundance of resources. In developing, tired and used countries, the constraints to resource improvement are cultural, religious, political and, of course, financial, not technical, as one might expect. When working with developing countries, it is important to determine if they need, or even want, high tech or sophisticated research to solve their resource problems. Instead, they may need just solid common sense, grassroot level recommendations, and demonstrations that will fit their way of life. The Chinese proverb "Give a man a fish and he will have a fish for a day. Teach a man to fish and he will have fish for many days" could apply to the United States involvement in developing countries—especially in the area of resource management. Bansi Dahr is being accepted because he works at the grass roots level.

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Riparian Zone Inventory

Sandra Braasch and George W. Tanner

Riparian zone management is receiving increased attention on all rangelands. These areas are important for protecting stream habitat and maintaining water quality. The riparian zones are important livestock grazing areas because of accessibility to succulent forage, gentle topography, availability of water, and generally abundant shade which provides temperature relief. Lack of streamside vegetation exposes banks to erosion from rain or running surface water.

Concern has been shown in recent years about the impacts of improper grazing management on riparian and stream ecosystems. Problems frequently attributed to grazing include (1) vegetation deterioration in the riparian zone, (2) streambank destruction, (3) shallower and wider streams, (4) higher stream-water temperature, (5) sediment-covered stream bottoms, and (6) deterioration of fish habitat and population levels (Busby 1979).

During the summer of 1987, a channel stability evaluation system (Pfankuch 1987) and plant habitat classification system (Johnston 1982) were used to study and evaluate the riparian zone along a creek in the Rio Grande National Forest in Conejos County, Colorado (Fig. 1). The Pfankuch channel stability and plant habitat classification system are procedures which can be used to both establish baseline conditions and to monitor riparian zone and stream responses to range management practices. These studies: (1) evaluated the capacity of mountain stream channels to resist detachment of bed and

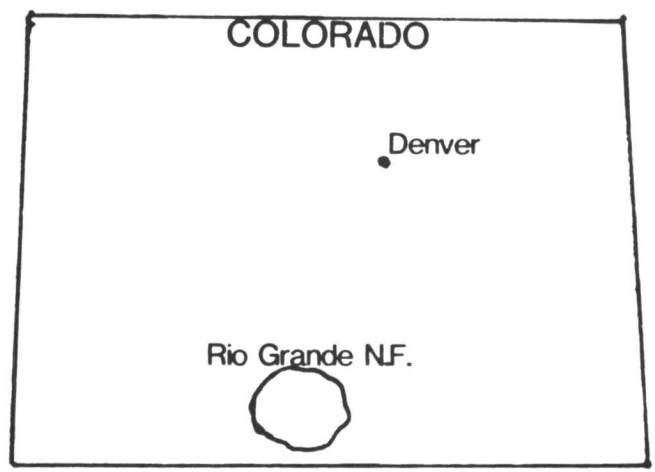

Fig. 1. *Location of Rio Grande National Forest, Conejos County, Colorado.*

Authors are undergraduate, Department of Wildlife and Range Sciences, University of Florida, Gainesville 32611; and associate professor, Department of Wildlife and Range Sciences, University of Florida, Gainesville 32611. Braasch was employed by the USDA-Forest Service while data were gathered.

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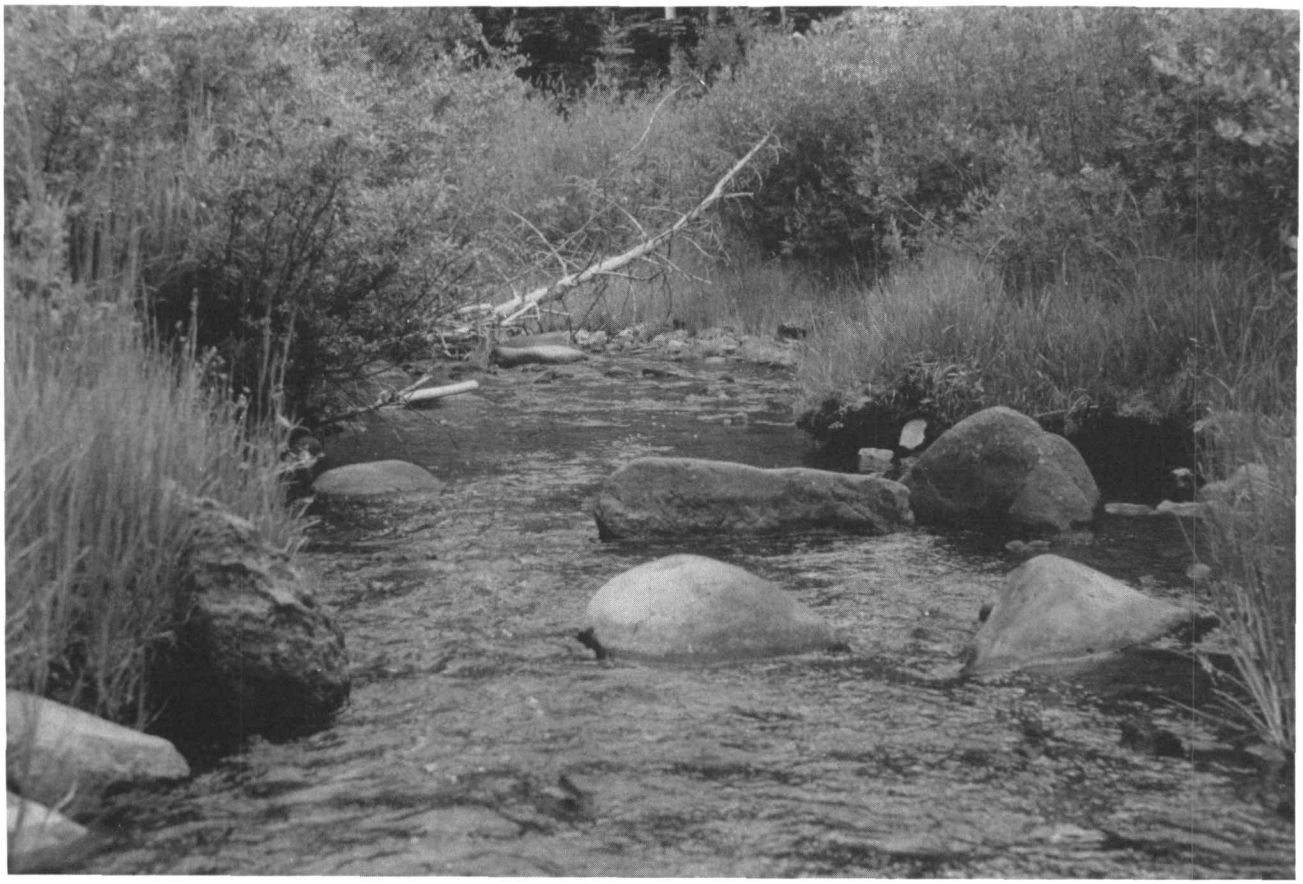

Fig. 2. *View of Jim Creek study stream.*

bank materials, (2) provided information about the capacity of streams to adjust to and recovery from potential changes in water flow and/or increases in sediment production, and (3) evaluated the successional stage and range condition of the riparian plant community. These studies provided a better understanding of the relationships between livestock grazing and riparian zone protection/preservation and the enhancement of fish habitats.

Study Area

The study was conducted along Jim Creek located in the La Jara watershed within the Rio Grande National Forest in Conejos County, Colorado. Elevation ranged from 9,900 feet near the Jim Creek cow camp to 11,640 feet in the northwest corner of the allotment. The study stream is bordered on the west by slopes of 30-50% and on the east slopes of 20-40% (Fig. 2).

The riparian community along Jim Creek is dominated by Thurber fescue, timothy, sedges, Kentucky bluegrass, meadow barley, yarrow, and cutleaf daisy. Overstory and midstory wood species include gooseberries/currants and willows. In some stretches of the the drainage, blue spruce and Douglas fir come down to the stream bank.

The adjacent upland communities support Kentucky bluegrass, wheatgrass and bluegrasses. Stands of subalpine fir, Engelmann spruce, and ponderosa pine, interspersed with cinquefoils, woods rose, Richardson geranium, flannel mullein, and thistles occur throughout.

Mean daily air temperature ranges from 75° F in July and August to -30° F in January. Precipitation occurs mainly in the form of winter snowfall. Approximately 35% of the 30 to 45 inches of annual precipitation results from rain during July and August.

Both cattle and sheep began grazing on this range around 1885. It was an important lambing area until after establishment of the Rio Grande National Forest in 1908. Grazing records show that the allotment was under season-long grazing until 1962 when it was placed under a "seasonal-deferred" rotation grazing plan. Since 1972 the allotment has been managed under a four-pasture, rest-rotation system with 145 cattle and two horses for a 3.5-month season beginning 20 June and ending 5 October.

The Rio Grande cutthroat trout originally occupied the upper Rio Grande River and its tributaries, but is now restricted to a few headwater streams within their original range. Following the construction of La Jara reservoir in 1910, brook trout from the reservoir hybridized with the Rio Grande cutthroat causing true breeding populations to be scarce. Because of this, the Rio Grande cutthroat was placed on Colorado's threatened species list in 1960. In 1977, steps to re-establish the traditional Rio Grande cutthroat in the study site's watershed were unsuccessful.

Methods

The riparian zone was characterized at 13 locations placed intermittently along a 2-mile reach of Jim Creek using a) the Pfankuch Channel Stability Rating which considered the physical aspects of the stream channel, and b) the Plant Habitat Classification which considered the vegetative aspects along the stream bank. The Pfankuch Channel Stability Rating procedure calls for the stream channel at each location to be subdivided into three zones; the upper and lower stream bank, and the stream bottom (Table 1). Within each of these zones various attributes listed in Table 1 are evaluated visually and

Table 1. Characteristics included in the Pfankuch Channel Stability Rating Evaluation.

Upper Bank	Lower Bank	Stream Bottom
Landform slope	Channel capacity	Rock angularity
Mass wasting	Bank rock content	Brightness
Debris jam potential	Obstructions flow	Consolidation
Vegetation bank protection	Cutting	Bottom size
	Sediment deposition	Clinging aquatic vegetation

ranked numerically according to a scorecard provided by the procedure. These numerical rankings are summed within separate zones and compared to a standardized condition class scale, ranging from poor to excellent condition, described in Table 2. Soil damage was included

Table 2. Standardized numeric ratings for determination of stream channel condition class when using the Pfankuch Channel Stability Rating procedure.

	Condition Class			
Bank/Channel zone	Excellent	Good	Fair	Poor
Upper bank	<10	11-20	21-30	31
Lower bank	<13	14-26	27-39	>40
Stream bottom	<15	16-30	31-45	>46
Total	<38	39-76	77-114	>115

to evaluate that portion of the physical substrate not evaluated by the Pfankuch method. In addition, other channel characteristics (length, sinuosity, gradient, dominant particle size, entrenchment/confinement, and channel type classification) were evaluated.

The dominant type of plant (lichen, grass/forb, shrub, and tree) and the successional stage of the Potential Natural Community (PNC) were determined by visual inspection at each sample site before evaluating the condition of the riparian plant community. The Plant Habitat Classification procedure uses a scorecard which provides a numerical ranking system for evaluating species composition, structure and density, as well as damage within the overstory, midstory, and understory of a site

Table 3. Characteristics included in the Plant Habitat Classification Evaluation that are numerically scored to estimate condition.

Stratum		
Overstory	Midstory	Understory
Density of tree overstory	Shrub composition	Understory composition
Damage to tree overstory	Density of shrubs (crown closure)	Ground cover
	Damage to shrub midstory	Damage to under-understory plants
		Damage to soils

(Table 3). Overstory species composition and structure define the successional stage of a site but are not used as actual evaluation criteria. The condition of the other parameters of the overstory, midstory, and understory were ranked numerically, summed for each sample site, and compared to a standardized scoring system for condition class for that successional stage. The overstory was evaluated according to tree crown closure and degree of browsing and damage to seedlings and saplings. Shrub species composition, crown closure, and browsing damage were evaluated in the understory. The understory vegetation was evaluated according to species composition, ground cover, grazing damage, and soil exposure. The appropriate numeric condition categories as established by the Plant Habitat classification procedure for a sawtimber dominant PNC, such as that which occurred along Jim Creek, are excellent (31-36), good (22-30), fair (14-21), poor (5-13), and very poor (0-4).

Results and Discussion

Results of the Pfankuch bank/channel stability inventory gave a cumulative fair-plus total rating (Σ = 80.9) for the upper bank, lower bank, and stream bottom (Table 4).

Table 4. Pfankuch bank/channel stability ratings measured at 13 locations along the Jim Creek study site, Rio Grande National Forest, Colorado. Data were collected July-August 1987.

	Numeric Rating		
Zone	Average	Min-Max	Std. Dev.
Upper Bank	21.5	19-26	1.9
Lower Bank	29.6	25-35	3.4
Stream Bottom	29.7	27-34	1.7
Total	80.9	72-90	1.7

Variation among the 13 sample sites was not great, and none of the scores approached poor condition. The Plant Habitat Classification inventory gave the vegetation a rating of good condition ($\bar{x}$ = 25.9; range = 24-29; standard deviation = 1.5). These evaluations were influenced by both beaver and cattle impacts.

Beaver impacts were located up-and-down-stream from

their dams. As might be expected beaver activity (channel obstructions) had a greater effect on the physical aspects of the stream than on the vegetation. Beaver activity reduced the ability of the stream to transport sediment in some areas by reducing the speed of water movement. Objects within the stream channel, such as large rocks, embedded logs, limbs, twigs, and bridge piling, changed the direction of flow and, sometimes, altered the velocity as well. These obstructions produced adverse effects by increasing normal stream velocity when the width/depth ratio was reduced.

Beaver dams produced favorable impacts by decreasing normal stream velocity and causing the formation of ponds. Dams raised the water level up to 5 feet higher than base levels of stream in areas without beaver activity. These newly created riparian communities were larger in size and, it was not uncommon for a 80-foot riparian zone to be extended 10-15 feet in width as the water level rose with dam formation. Beaver dams trap nutrients which nourish an abundance of aquatic life and terrestrial vegetation along with creating pools for fish habitat.

Beavers appeared to have no adverse impacts on the riparian vegetation. Overall beaver activity increased the availability of subsurface water which aided in the vegetative development of the riparian community (Munther 1981).

Cattle impacts were noted along some areas of the stream, generally more so on the physical aspects of the stream than on the vegetative aspects. Cattle activity was most notable on the lower bank where bank cutting, stream deposition, and eventual channelization were evident. Bank cutting, which is one of the first signs of channel degradation, appears to be caused by cattle foraging along the banks. Stream deposition occurred where the active bank cutting placed deposits of fresh, coarse sands and gravels on old and even some new bars. Channelization was evident in some area through these new deposits. No significant adverse impacts of cattle activity on the vegetative aspects were noted except the presence of some undesirable, exotic weeds such as thistle and flannel mullein.

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A Proposal for Reallocation of Federal Grazing—Revisited

B. Delworth Gardner

Over a quarter of a century ago, I analyzed the allocation procedures utilized by the federal agencies which administer livestock grazing on the public lands (Gardner 1962). Two factors contributing to grazing misallocation and reduced range productivity were identified: (1) the "eligibility" requirements that qualify permittees for grazing privileges prevented the utilization of forage by ranchers who would value it most, and (2) use-tenure insecurity resulting from cuts in permitted grazing impeded private investment in range improvements on the public ranges. In a second paper, I proposed that the grazing privilege system be reformed such that efficient allocation of forage and tenure security could be more nearly achieved (Gardner 1963). Following in this paper is further discussion of my proposal to create perpetual grazing rights, why it is still applicable today, and why I believe that little was done to implement it.

The Allocation of Grazing Permits on the Federal Lands

Some History

When public control of livestock grazing on the public lands was initiated many decades ago, agency regulations required that rancher applicants be engaged in the livestock business and that they own or control land or water base property. This "commensurability" requirement was designed to eliminate the so-called "itinerant" stockman from consideration for permits. These "nomadic" livestock producers, often with little or no ranch property of their own, moved large herds of grazing animals across vast areas of the West during the various seasons of the year when forage was available. Commensurability was thought to promote the stability of the ranching and derivative industries that make up the local community.

The other major eligibility requirement was "use-priority" which gave preference to those applicants who were using the public land prior to governmental regulation.

At the time when government control of grazing was being considered, ranchers who had been previously utilizing the public lands and paying no fees felt economically threatened. Naturally, they resisted the new regulations. To minimize their political opposition, these ranchers were given preference by the government for receiving the available permits via the eligibility requirements. Fees were set at very low levels, presumably only to cover the costs of administering the new grazing programs. Agency boards of local ranchers were given considerable power to influence grazing policy decisions. These stratagems had their desired effects. Political opposition by ranchers was not sufficiently strong to block the proposed regulation and control.

Modern Day Issues

The system that restricted permit allocation to only those "qualified" permittees has been incapable of responding to changes in the livestock business and other pressures on the public lands and thus is becoming increasingly inefficient (Gardner 1984). Non-permittee ranchers desire access to the subsidized grazing. This can be accomplished only by becoming "eligible," often requiring the purchase of the base property or livestock of an existing permittee.

With the increase in the demand for outdoor recreation and the emergence of the environmental movement in the 1960's and 1970's, other outputs from the federal lands have become increasingly valuable and new pressures are being brought to reduce livestock grazing. As a consequence, the total animal-unit-months (AUMs) of permitted livestock grazing were reduced, first on the national forests in the 1950's and 1960's, and later on the public domain (Gardner 1962). The result has been a waning of confidence that federal grazing will continue to be available to permittees at favorable terms.

It is axiomatic that successful entrepreneurs must be capable of responding quickly to changes in technological possibilities, prices, and costs if they are to survive in a competitive market environment. Yet federal agencies dictate stocking rates, classes of livestock that can be grazed, the length of the grazing season and what can and cannot be done to increase forage yields. Permittees have little freedom to choose and utilize different grazing regimes, various grazing intensities, and earlier or later grazing than dictated by the regulating agency. Also, permitted grazing may be cut by agency discretion giving rise to tenure insecurity described above. Incentives are weak at best for rancher investment in capital improvements that might increase the productivity of the public ranges and thus benefit all public land users.

Perpetual Grazing Rights Plan

In 1963 I proposed the creation of perpetual grazing rights. The government would specify the quantity of AUMs that could be grazed on a given allotment, the class of grazing animals (e.g., cattle or sheep), and the season of use. These rights would be issued to the existing permittees as a substitute for existing permits.

Eligibility requirements would be eliminated and the

The paper has benefited from suggestions by Ray Huffaker, Arden Pope, John Workman, Dean Lueck and Ed Frandsen. The editor of *Rangelands*, Gary Frasier and an anonymous reviewer were immensely helpful in shortening and recasting the paper. Only the author, however, should be blamed for errors in fact and logic which remain.

grazing rights could be freely transferred in voluntary market transactions. Thus, property rights in grazing would be created that were defined, defendable, and divestible. If the federal government decided that range condition warranted an increase in livestock AUMs, it would simply create new rights and auction them off to the highest bidder. If it wanted to decrease grazing, it could buy up the existing rights at market prices. Very importantly, if other user groups wanted the forage or the grazing allotment without livestock, they could purchase the rights in the market. The proposal seemed to promote an efficient allocation of resources and security of tenure lacking in the existing procedures and yet continued to give the government final authority to set stocking rates.

I anticipated that the grazing fee issue might be relevant to the political feasibility of the proposal. If grazing rights were perpetual and freely transferable among ranchers, the expected minimum market transfer price of the rights would be the capitalized differential between the expected average value of the grazing and the average costs of taking the forage. One of these costs would be the fee paid to the government. Thus, the level of the fee and the value of the right would be inversely related.

At fee levels existing in the early 1960s when the proposal was made, the new rights could have been expected to be worth more than the permits they replaced because they were transferable and offered greater economic security. Thus, unless fees were raised, wealth windfalls would have been created for the permittees. Since the alleged "subsidy" to ranchers has always been controversial, it appeared that the political feasibility of the proposal would be enhanced by not directly increasing the wealth of the permittees. To avoid this problem, I recommended that the fee be fixed at a level which would make the new rights equal in value to the old permits.

The increased fees would have been attractive to the taxpayer owners of the public lands and to the government agencies desiring larger budgets. Environmental organizations would have been sated because they have always wanted the subsidy to ranchers reduced and more revenues for range improvements. The ranchers would have tenure security and a vigorous market in which they could buy and sell the grazing rights. Thus, the proposal appeared to be attractive to all the relevant parties.

Then why hasn't the proposal been adopted in the intervening years? The answer to this question is complex.

In my view, public choice theory provides the most plausible answer. This theory postulates that given interest groups can manipulate legislative, administrative, and judicial decisions to their advantage, even though in aggregate across all interests, the contest for government favors is likely to be negative-sum. That is, the total gains captured by the winners of some public action (e.g., environmental groups) are less than the total losses suffered by the losers (e.g. rancher permittees). Presumably, recreational, environmental, and conservation organizations that wanted reduced livestock grazing on the public lands believed it was in their interest to retain the existing permit system and used judicial action and pressure on the legislative and executive branches to accomplish their goals. This doesn't mean that they are satisified with the status quo, but they certainly did not want any reforms that gave definable rights to the livestock permittees.

Evidence that supports this hypothesis is found in two recent suits: 1) a 1985 suit brought in a federal court to block "cooperative management agreements" (CMAs) that were created to implement the "experimental rancher stewardship" (ESP) programs as authorized by the Public Rangeland Improvement Act (PRIA), and 2) a 1986 suit challenging the grazing fee formula also authorized in PRIA.

The Suit Against Cooperative Management Agreements

The Federal Land Policy and Management Act (FLPMA) of 1976 was very restrictive in the regulations imposed on ranchers. However, PRIA of 1978 took a halting step forward to loosen these restrictions and give permittees more flexibility.

Despite evidence to the contrary (Box 1978), FLPMA simply asserted that the federal rangeland was "continuing to deteriorate" (43 U.S.C. art. 1751, Sec. 401(b), 1976) and instituted comprehensive long-run federal management of rangeland for the twin purposes of sustained yield and multiple use. It authorized the Secretary of Interior to cancel, suspend, or modify permits as punishment for rule violations; to offer short-term licenses rather than ten-year permits when they are in the "interest of sound land management", and to limit the guarantee of renewal to an offer of "first priority" so long as expiring permit holders were willing to accept any new conditions of the Secretary (43 U.S.C. art. 1751, Sec. 402 (a), 1976).

PRIA repeated the assertion of deterioration of public rangeland and supplemented FLPMA's comprehensive land management program by authorizing additional funds for federal rangeland management programs (43 U.S. Code, art. 1901, Sec. 5, 1978). However, PRIA broke new ground by establishing the Experimental Stewardship Program (43 U.S.C. 1906, Sec. 12, 1978). The ESP authorized the Secretaries of the Interior and Agriculture to ". . . explore innovative grazing management policies and systems which might provide incentives to improve range condition. . . and such other incentives as they may deem appropriate."

Under this authority, the Secretaries implemented the 5D0 Cooperative Management Agreement program. The CMAs were cooperative agreements between government officials and grazing permittees who demonstrate exemplary rangeland management practices. The agreements established mutually determined "performance standards" for the graziers. Cooperative permittees, viewed as the stewards of their grazing allotments, were to be rewarded with increased tenure security. Since arbitrary cuts could not be made without review, the permittees were left relatively free to determine the livestock numbers

and seasons of use which achieve the standards (BLM Handbook 1984).

A CMA was issued for a ten-year term but operated on a five-year "rolling" plan as it was to be jointly reviewed after five years of implementation. If objectives of the plan were not being met, the cooperative permittee ". . . is allowed a reasonable time to make the necessary adjustments to comply with the objectives before the agreement terminates" (BLM Handbook 1984). The procedure was to be repeated every five years.

This step towards greater rancher autonomy in managing their allotments was perceived, at least in some quarters, as a public giveaway to private rancher interests unwarranted by Congressional intent. In 1985, a suit was brought before a Federal District Court by five environmental and wildlife organizations and one individual challenging agency regulations establishing the CMA program (NRDC v. Hodel 1985).

The Court struck down the regulations establishing the CMA program stating that the CMA: (1) created a permanent permit issuance system which did not meet the description of projects the ESP program was intended by Congress to encourage; and (2) was also unjustified by past public grazing law, such as the Taylor Grazing Act and FLPMA (Huffaker and Gardner 1987).

In a recent paper, Huffaker and Gardner (1987) argued that the Court's interpretation was unjustifiably narrow since it frustrated Congressional intent in fashioning the ESP. The CMAs can be consistent with both the ESP and past grazing legislation if the statutes are given a slightly wider reading.

We argued that "the 'plain meaning' of the ESP is an incompletely developed policy meant to discover, under controlled conditions, whether allowing qualified permittees to actively direct decisionmaking results in improved range condition. . . Public land managers would be the true stewards if they could cancel, suspend, or modify the permits of permittees who made decisions not conforming to the manager's desires. . . Hence, the experimental design of the ESP would be frustrated since it is meant to determine what permittees, not public range managers, with decisionmaking responsibility will do. . . (t)he CMA program is administered under controlled conditions. Agreements are entered into only with qualified permittees. The agreements are cooperatively drafted and reviewed every five years. . . The Court's charge that the five-year review period makes a CMA permanent, notwithstanding the cooperative permittee"s performance, is grossly exaggerated" (Huffaker and Gardner 1987).

In fact, we believe that the Court missed the point behind congressional creation of the CMAs. It incorrectly assumed that a reading of the history of livestock grazing on the public lands teaches that if left uncontrolled, rancher permittees will overgraze their allotments. The rationale for this conclusion is found in resource depletion caused by "common property" ownership of the allotments, the very case made famous by Garrett Hardin's (1968) "tragedy of the commons."

In fact, the uncontrolled open access to resources that may have resulted in overgrazing in the past is almost wholly circumvented by the CMAs. Allotments could be designed for exclusive permittee use. A rancher could benefit by having flexibility in management practices that could improve range productivity and thus could improve his wealth position. Incentives would be created for giving wealth gains to ranchers through improvements in range productivity.

Whether or not these incentives would result in enhanced range condition was the objective of the experiment. But if the five-year review revealed that the experiment wasn't producing results completely satisfactory to the agency officials, the true custodians of the range, the program could be terminated. What greater guarantees could be needed to prevent possible rancher abuse? Here was an opportunity to determine if greater rancher management discretion might lead to increases in range productivity that would enhance environmental amenities as well as livestock output. I, for one, regret that because of the Court's decision we may never know.

The Controversy over the Quantity of Grazing and Grazing Fees

By Executive Order 12548, dated February 14, 1986, the President directed that the Secretaries of Agriculture and Interior exercise their authority ". . . to establish fees for domestic livestock grazing on the public rangelands by applying the formula in Section 6 (a) of the PRIA, with the added provision that the fee shall not be less than $1.35 per head month" (USDA, Finding 1987).

In 1986, eight environmental and recreational organizations and two individuals[1] brought suit against the Forest Service and the Bureau of Land Management. The suit challenged the authority of the Secretaries of Agriculture and Interior to use the formula and the procedures followed in establishing the 1986 grazing fee. The suit charged that the fee formula ". . . was adopted without compliance with mandated procedures. Moreover, the formula was alleged to violate the substantive statutory requirement that fair market value be charged for use of the public's resources. As a result, the formula adopted by the federal defendants will deny funds badly needed to protect and rehabilitate lands and resources degraded by past livestock grazing and will seriously hamper the government's ability to manage properly the public rangelands" (Civil No. S-86-0548, 1986). The positions of both plaintiffs and the government defendants are partially but not wholly valid.

The plaintiffs' position is based on two points: (1) grazing is like any other commodity with a negatively sloped demand curve (Rice affidavit 1985), and (2) setting the fee below "fair market value" results in overstocking the ranges by the permittees and deprives the government of

[1]The plaintiffs in this suit were the Natural Resources Defense Council, American Fisheries Society, California Trout, Inc., Izaak Walton League of American, National Audubon Society, National Wildlife Federation, Oregon Trout, The Wilderness Society, Carl L. Weidert III, and Stanley A. Weidert.

revenues that are designated by formula to be spent to improve range productivity.

The government defendants argued that the level of the fee has no impact on the quantity of allowable grazing. Speaking for the Forest Service, "The permitted use level is determined through the Forest planning and allotment management planning processes and is set in the grazing permit. This process occurs entirely independently of grazing fees. Therefore, physical and biological effects of permitted livestock grazing are determined by factors other than the grazing fee levels" (USDA, Finding 1987, Workman 1988).

Both theoretical and empirical considerations are relevant to this dispute. For various reasons, collectively and perhaps individually, permittees usually do not actually graze the number of AUMs authorized. The difference between permitted and actual use is termed nonuse. Nonuse has been recorded by the Forest Service over the period 1979 to 1986 and has varied from a low of 11.1% in 1980 to a high of 15% in 1986.

The fact that some nonuse is now occurring at present fee levels is evidence that for one reason or another some grazing is not worth what the permittees are being asked to pay for it. Therefore, raising the fee would almost surely result in more nonuse. The plaintiffs were technically correct in asserting that a rise in the fee would reduce livestock grazing. On the other hand, the fact that many permittees are utilizing the full allowable use implies that raising the fee would reduce their permit values but may not affect the quantity of grazing.

What do the available data indicate about fees and nonuse? Not much variation in annual nonuse exists. The government maintains that there is no relationship between the fee and the quantity of grazing demanded over the years that the PRIA formula has been in effect, 1979-1986 (USDA, Finding 1987). The government correctly argued that other factors appear to correlate more closely with variation in actual use than do grazing fees. "For example, the costs that livestock producers pay for production of their cattle, and the prices they receive for those cattle, may influence the level of actual use and therefore nonuse. A statistical analysis comparing beef cattle prices in 1979-1986, with the percent of nonuse, shows a strong negative correlation. That is, as beef cattle prices increase, percent nonuse tends to decrease. Also, a statistical analysis for the same period comparing producer prices paid (cost of livestock production), with percent of nonuse, shows a strong positive correlation" (USDA, Finding 1987).

The problem is that both beef prices received and production costs incurred are terms in the formula for determining the grazing fee. As beef cattle prices rise, the profitability of grazing should increase and nonuse should fall, all other things equal. As production costs increase, the profitability of public grazing should decrease and nonuse should increase. As the value of substitute forage decreases, nonuse of permitted federal forage should increase as ranchers shift to the now cheaper private substitutes.

In summary, it is clear that changes in the fee itself are not closely associated with changes in nonuse over the period of the PRIA formula, although individual components of the fee do seem to be so associated. However, much variation exists in the physical and economic situations of individual ranchers that would cause them to value the federal forage at different levels, and no one really knows how many would opt for nonuse in the face of substantially higher fees.

Summary and Conclusions

I believe that the nature of the allocation problem on government-owned ranges has changed over the past 25 years. In 1963, I was concerned primarily about the allocation of the allowable grazing among potentially competing ranchers. Clearly, the critical allocation problem now is between livestock producers and other users of the public ranges.

As in 1963, I see no compelling reasons for maintaining the eligibility requirements for receiving grazing preferences. There is no question that the allowable quantity of livestock grazing would be more efficiently allocated if grazing rights were created along the lines of my original proposal. Incentives to invest in range improvements would exist if these improvements were truly economically feasible. Potential users who now regard the public lands as unavailable to them could easily acquire access by buying out the ranchers.

In my opinion, there is also little doubt that the quantity of grazing that is now allowable to livestock could be much more efficiently utilized if ranchers were given more management flexibility as was attempted in the cooperative management program. However, there is little available evidence for this conclusion, except *a priori* logic. That stewardship program should be reinstated to permit us to observe whether or not ranchers would increase range efficiency and productivity and by how much.

The level of rancher subsidy and fees will continue to be a controversial subject. But the ranchers are not the only ones who benefit more from the public lands than they are paying. If the environmental organizations and recreationists want to reduce livestock grazing in order to increase the amount of forage left for their users or for the public generally, they might think about taxing themselves to buy the ranchers out and/or contribute funds for range improvement. It is possible that they could do it more economically under a scheme of transferable rights to forage than attempting to manipulate political and legal institutions via rent-seeking expenditures they are now making.

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Requiescant in Pace

Alexander Johnston, 69, a longtime member of the Society for Range Management and widely respected range ecologist died in his sleep on April 12, 1989, in Lethbridge, Alberta.

Alex was born on January 26, 1920, in Webb, Saskatchewan, and took his early schooling there. He graduated from the University of Saskatchewan with a B.Sc. in Agriculture in 1941 and the Montana State University in 1954.

In his early years at the Lethbridge Experimental Station he assisted with the regrassing of abandoned farm lands in southeastern Alberta. He was later given responsibility for initiating a research program at the Stavely Grassland Substation established in the foothills of southwestern Alberta in 1949. Over the next 30 years he conducted studies on vegetation and livestock relationships and determined the carrying capacity of the Fescue Grassland prairie. The Public Lands grazing policy in Alberta is closely related to his research findings. Alex communicated the results of his research through the publication of 66 scientific and 124 semi-technical and popular articles and through rangeland tours, meetings, short courses and the various news media. He retired from the Agriculture Canada Research Branch on December 30, 1980.

Alex was a Charter and Life Member of the Society for Range Management and was very active at the Section and National levels. He held various offices in the International Mountain Section and was Newsletter Editor for 18 years. He was Program Chairman for the 1969 and 1982 Annual Meetings held in Calgary. At the National level he served on several committees, on Editorial Boards and on the Board of Directors during 1965–1967. Alex also belonged to and held offices in several other research and conservation societies or associations.

During his career Alex earned a number of significant awards. Among them are: Canada Centennial Medal—1967; Citation and Certificate of Merit, Society for Range Management—1970; Honorary Doctorate [LL.D.] from the University of Lethbridge—1976; Fellow of the Agricultural Institute of Canada—1976; and Fellow of the Society for Range Management—1977.

Alex undertook foreign assignments in West Pakistan in 1961–1962 as Range Improvement Advisor; in Kenya in 1978 to evaluate Kenya's Rangelands Ecological Monitoring Unit; and again in Pakistan in 1979 to identify and advise on agricultural problems. He also fulfilled assignments to Newfoundland and Yukon for the Canadian government.

In retirement Alex devoted full time to the study of local and regional history, an interest which began in the early 1960's. He was instrumental in establishing the Galt Museum in 1964 through the Lethbridge Historical Society. He researched and authored or coauthored over 12 local history books, the most notable being Lethbridge—A Centennial History in 1985. He was to attend a press conference to unveil his latest book entitled *Lethbridge; Its Coal Industry* and to autograph copies on the day of his death.

Walter H. Sundell, 71, of Boise, died suddenly Monday, January 9, 1989, at home of natural causes.

Mr. Sundell was born April 23, 1917, in Miles City, Montana. He was educated in Kingsburg, California, Miles City, and graduated from the University of Montana in 1941 with a degree in forestry. He worked as a forest ranger in various Montana National Forests, residing in Helena, Ennis, Ashland, and White Sulphur Springs. In 1962 he was promoted with the Forest Service in Range Management, in Orem, Utah. In 1963, Mr. Sundell moved to Boise, filling the position of Staff Officer in charge of Wildlife, Watershed, Range Management, and Soils in the Boise National Forest. He retired after 33 years with the Forest Service and was honored in 1975. Following his retirement, he worked as a title researcher and in other capacities in the gas and oil lease business.

Walter served as president of the Idaho Section, Society for Range Management. He was a great lover of the outdoors, expressing his love of nature in his oil and watercolor paintings and exquisitely carved duck decoys. He spent hours giving of himself with the Boy Scouts of America. He was devoted to his family and grandchildren. Walter was a skilled horseman, an enthusiastic walker, and avid golfer.

Central Plains Experimental Range: 50 Years of Research

Marvin Shoop, Susan Kanode, and Mary Calvert

The dust bowl days—just thinking about them brings up pictures of dust-filled skies, devastated farmland and bare rangeland.

The mid-1930s found most farmers and ranchers on the western Great Plains in bad to desperate economic straits. The Government homesteads were too small to be profitable. Plowing destroyed the shortgrass prairie and remaining rangelands were damaged by drought, overgrazing and soil blown from plowed fields.

The western shortgrass prairie was not suitable for dryland farming. There was a definite need to improve management practices of these fragile grasslands. The Central Plains Experimental Range was established to meet this need.

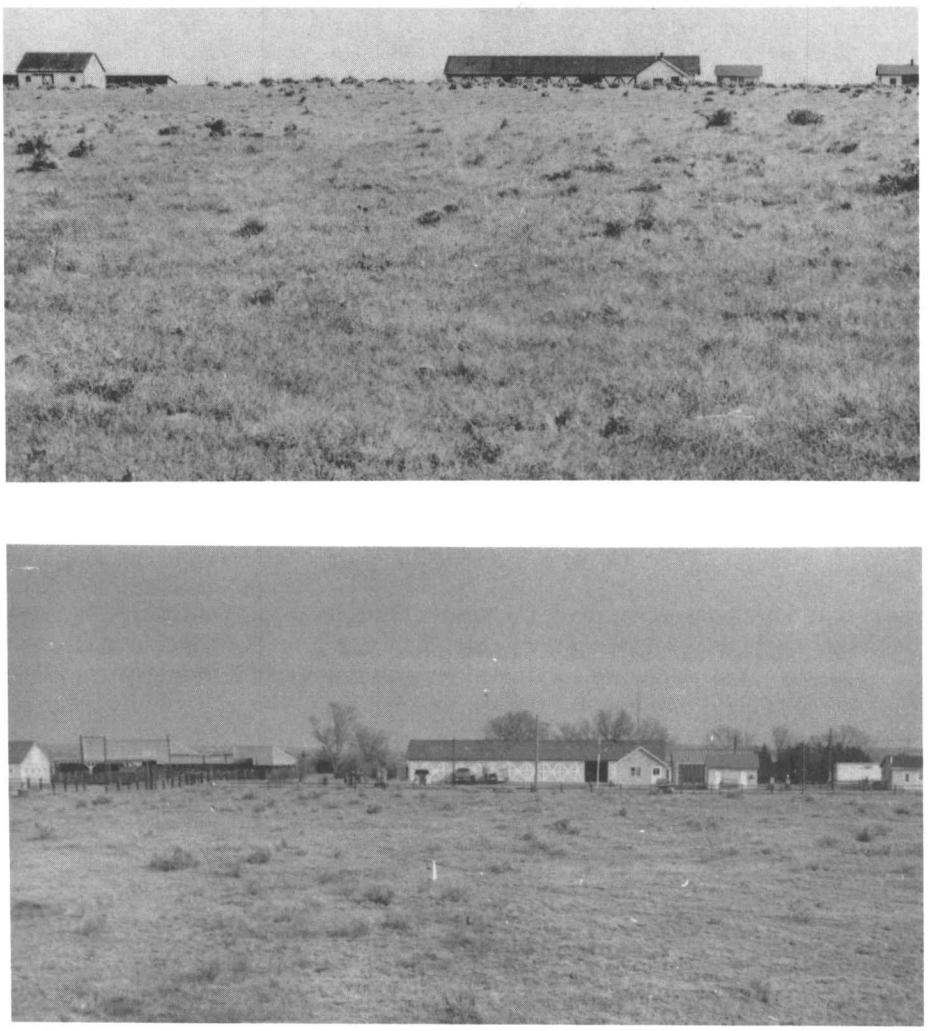
In 1933 the Federal Government passed the National Industrial Recovery Act followed by the Emergency Relief Appropriations Act in 1935, and the Bankhead-Jones Farm Tenant Act in 1937. The Resettlement Administration was created to manage these programs. One of the more devastated areas in northern Colorado was designated as the Weld County Land Utilization Project. Under this project, the government bought land and assisted property owners in relocating.

Administration of the Weld County Land Utilization Project passed from the Resettlement Administration to the Soil Conservation Service in 1938 then to the U.S. Forest Service in 1954. The project was renamed the Pawnee National Grassland on April 1, 1961.

In May 1937 the Agriculture Secretary approved a Forest Service request for an experimental range in Weld County. The northwestern corner of the Land Utilization project area was chosen for the Central Plains Experimental Range. The original project contained 8,440 acres of Federal land but was soon expanded to 9,440 acres. The Experimental Range's main mission was, and is, to solve range management problems of the shortgrass prairie.

From the Experimental Range's beginning the Crow Valley Livestock Cooperative, Inc. (Crow Valley) has supplied grazing study cattle under Forest Service and Agriculture Research Service agreements. Crow Valley, organized in 1936, holds grazing permits on the Pawnee National Grassland's western portion. They have been supporters of research programs throughout Central Plains Experimental Range's history.

Some natural events stand out in the Experimental Range's history. A flood on Little Owl Creek in June 1965 swept away 38 heifers belonging to Crow Valley ranchers. The flood deposited hail drifts taller than the horses



CPER headquarters in about 1939 (top) and in 1989 (bottom). The shrub is fourwing saltbush, common on sandy range and flood plain sites.

Marvin Shoop is research scientist, Dept. of Range Science, Colorado State University, and former range scientist, USDA-ARS, GPSR, Fort Collins, Colo. Susan Kanode is a free-lance public relations specialist and a neighbor of CPER, 54501 WCR 53 Ault, Colo., 80610. Mary Gore Calvert is range technician, USDA-ARS, GPSR. Calvert's and Shoop's address is 1701 Center Ave., Fort Collins, Colo. 80526.

The authors thank the many people who contributed information and editorial help for this paper.

Pricklypear harvesting in about 1939 (top) and in 1980's (bottom).

the staff rode to survey damage. The blizzard of 1949 practically buried the buildings and prevented all travel. Droughts in 1939 and 1954 were severe but the worst was in 1964 when essentially no forage was produced on upland sites.

Both visitors and inhabitants have been awed and inspired by the shortgrass prairie's beauty in early summer when grass is green and sprinkled with wildflowers. They also have been awed, but not inspired, by the prairie's starkness during cold winter months.

1937-53

Dr. David Costello, associate forest ecologist, directed the Experimental Range research from its start through 1953. Hubert D. Burke, junior range examiner, was the first scientist in charge and he selected the site and established the facilities.

Burke had a budget of only $1,400 to establish the facilities. The Resettlement Administration, Soil Conservation Service and other organizations provided assistance and some materials. Several National Forests provided 23 railroad carloads of posts and poles for fences and corrals. The Work Project Administration provided construction. Most of the barbed wire for 58 miles of fence was obtained from old homestead fences as far as 25 miles away. Workmen salvaged lumber from old homestead buildings for an office, warehouse-shop, barn, cattle shed, and scales. Eleven wells and windmills, two sets of corrals, a dipping vat, and a gasoline house were also built. Travel was difficult during this time and some staff hired a cook and lived on the Experimental Range. Burke was re-assigned to an Oklahoma project in July 1938.

The Forest Service initiated the first formal research, a grazing intensity study, in May 1939. The first year was basically devoted to developing research procedures. Other early studies included the effect of rabbits on vegetation, and the life histories of blue grama and plains prickly pear.

In April 1939, George Turner succeeded Burke as scientist in charge until he entered the military in July 1942. W.M. (Wally) Johnson was in charge of the Experimental Range during the remaining war years. G.E. (Zeke) Klipple started to work full time at the Experimental Range in 1945 and in September 1946 became scientist in charge.

Costello, Turner, Klipple and others wrote over 40 publications from Experimental Range research. Most publications during World War II were about increasing rangeland production to help the war effort.

Frank R. Williams, a cowboy for the Hardy Ranch before it became part of the Experimental Range, was the first person hired by the Forest Service to tend the Experimental Range's cattle.

1954-88

The Agricultural Act of 1953 brought about a major change. The Act reorganized the USDA and transferred Klipple and the Experimental Range's administration from the Forest Service to the Agricultural Research Service.

On Aug. 25, 1961, the Forest Service transferred 14,599 acres to the Agricultural Research Service. This included the previous lands of the Experimental Range and about 4,000 adjacent acres from the Pawnee National Grassland. Additional lands were added at other times.

Robert (Bob) Bement was scientist in charge from December 1955 until retirement in early 1973. He used Experimental Range grazing intensity data to develop curves relating quantity of ungrazed vegetation to individual animal gains and gain per acre. Proper stocking rates have been determined using this technique from Iceland to Africa.

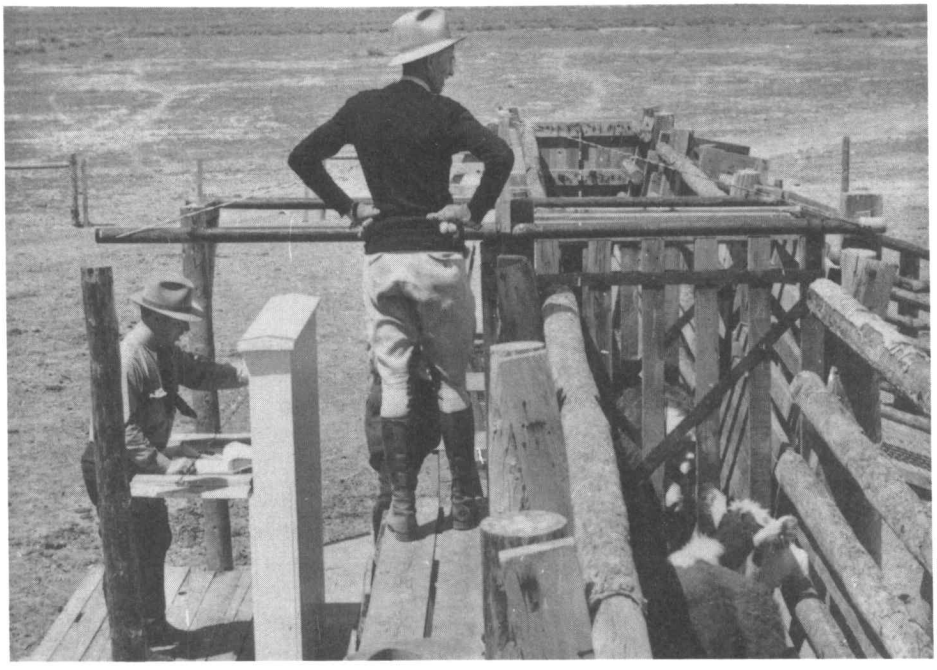
Other research scientists that have conducted extensive studies on the Experimental Range include: William J. (Bill) McGinnies, worked from 1956 to 1987 on reseeding and range improvements. Dr. D.N. (Don) Hyder transferred from Burns, Ore., in 1961. Hyder was Forage and Range Management Research Unit leader from its creation in 1973 until retirement in 1976. He was widely recognized for achievements in plant development and plant-grazing interaction. Dr. Walter Houston researched range improvements from 1968 until his retirement in 1977. Dr. Charley Townsend began research on selecting and breeding legumes for rangeland in 1969. He is still a dedicated member of the Unit.

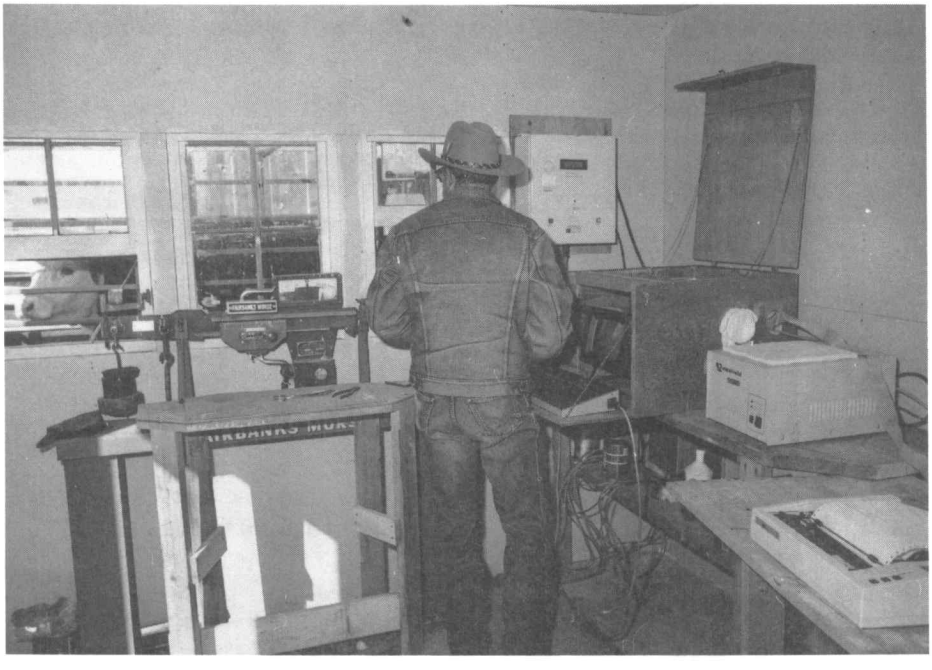
Forage and Range Unit achievements during 1961-77 showed that a group of scientists working together can accomplish more per scientist than one or two scientists working alone. Experimental Range funding had been meager. Indoor plumbing was not available there until 1963.

During 1954-72 cooperation with Colorado State University scientists increased. Some of those include Don Hervey, A.C. Everson, R.D. Barmington, E.E. Remmenga, Charles Terwilliger Jr., J.J. Norris, Terry Vaughn, and K.L. Knox. Later University cooperators included Gary Rupp, Robert Mortimer, Les Ball, Timm Stanton, Clint Wasser and Ken Doxtader.

Robert Bement recording forage inventory with paper and pencil during 1950's (top) and Robert Engel recording with hand-held computer and bar coding during 1989 (bottom).

In 1968, the Central Plains Experimental Range staff began working with Colorado State University's Natural Resource Ecology Laboratory on studies funded by the National Science Foundation. Programs include the Grassland Biome project of the International Biological Program (1968-1974) and the Long Term Ecological Research program (1982-present). Much Grassland Biome research conducted mainly on the Exper-





David Costello (left) and G.E. Klipple weighing cattle with mechanical scales and hand-recorded weights during 1940's (top) and Robert Engel weighing with electronic scale and computer during 1989 (bottom). Equipment at left of Engel is beam and self-stamping poise of standby mechanical scale.

imental Range was commonly referred to having been on the "Pawnee Site".

The Long Term Ecological Research project is one of 16 sites in 14 states and territories. Each site was established to study natural and agricultural systems processes on time scales from decades to centuries. At the Experimental Range, this research focuses on: (1) interrelations among geomorphology, landscapes, soils and vegetation structure; (2) weather and atmospheric deposition; (3) erosion and sedimentation; (4) soil water dynamics; (5) patterns and controls of primary production; (6) elemental cycling and organic matter; (7) secondary production and population dynamics of selected consumers; and (8) small and large-scale disturbance ecology. Simulation modeling is an important tool for each research topic common to all 16 sites.

The physiology and morphology of blue grama grass seedlings were investigated by Dr. A.M. (Al) Wilson from 1972 until his death in 1984. Wilson transferred from Pullman, Wash. Dr. Marvin Shoop came to Fort Collins from the Agriculture Research Service range program at Woodward, Okla., to become scientist in charge of the Experimental Range after Bement's retirement in 1973. Shoop's interests have been range improvements and grazing management. Dr. W.A. (Bill) Laycock replaced Dr. Hyder in 1976 as Forage and Range Unit leader until 1985. In 1980, Dr. R.A. (Rudy) Bowman converted from full-time research with the Soil, Plant, Water Research Unit to half-time work on range soils. Dr. Jon Hanson transferred from Cheyenne, Wyo., to Fort Collins in 1983 to work on computer simulation of range systems. Dr. Albert Grable was research leader of the Unit from 1985 to 1988. Under Grable, the Forage and Range and the Agri-Ecosystems Research Units were combined, forming the Great Plains Systems Research Unit.

Robert Engel, technician and foreman, has been associated with the Experimental Range longer than any other person. He started work there in 1953. His wife Atheline has worked at the Experimental Range part-time since 1960. Another long-term technician was F.E. (Spud) Horton. He worked at the Experimental Range from 1955-79.

Accomplishments

An early achievement was understanding plant life on native prairie and abandoned plowed lands. Knowledge of experimental techniques for measuring vegetational response to treatments was gained, including interpreting vegetational responses after excluding livestock grazing.

A 10-year comparison of an early- and late-season grazing system with summer-long grazing showed significant losses in herbage production from the early- and late- season pastures with short-term heavy stocking. Early-season grazing also caused mechanical damage to vegetation and soil. Summer-long pastures maintained production, had little plant damage, and were as profitable as early-grazed pastures.

Summer-long grazing on shortgrass range at a 60% forage use (heavy grazing) reduced herbage production by 35% compared with a utilization level of only 40% (moderate grazing). Heifers on heavily grazed pastures gained 19% (43 pounds) less than those on moderately grazed pastures. Moderate grazing was more proffitable than either heavy or light grazing (20% forage use). After 23 years of grazing, frequency percentage of species did not differ greatly among the three grazing intensities on shortgrass range.

A primary finding of long-term studies was that amounts of herbage available on a pasture can be used as a guide for managing shortgrass range. Maximum profits from yearling cattle and grass are obtained when 300 pounds of air-dry herbage per acre remain ungrazed. This nongrazed herbage level provided optimum livestock production and adequate foliage for rapid herbage growth with favorable conditions. Vegetation and soil were also conserved. Research showed the amount of available herbage can be easily estimated using visual indicators.

Studies determined combined and individual effects of time of rainfall, time of heavy grazing, and nitrogen fertilization on range plant species abundance and production, and beef production. With repeated heavy grazing, most species responded more to weather than grazing.

Researchers found that atrazine controls all annual species on the shortgrass prairie, reduces abundance of cool-season grasses when applied at medium rates, and increases protein content and drought resistance of warm-season grasses. Most significant, from 1979-88 atrazine applied at one pound per acre in alternate falls increased beef production 53% above no treatment and was highly profitable.

Grazing trials showed that fertilization of shortgrass range with 20 pounds of nitrogen per acre each fall increased beef production 66% from 1979-88, but reduced profits due to high cost. Nitrogen fertilization increased drought mortality of blue grama on fine sandy loam soil, and probably should not be applied to any soil unless atrazine is also applied to increase drought resistance.

Nitrogen fertilizer applied at 20 pounds per acre each fall for nine years controlled red threeawn, improved botanical composition, and increased herbage yield on sandy, abandoned cropland. However, costs were not recovered until six years after fertilization ceased.

Scientist determined requirements and equipment needed for frequency sampling to be a fast, reliable means of measuring abundance of plant species on shortgrass range.

Research showed that snowfences can be used to increase spring soil moisture and produce cool--season grass for earlier spring forage or a hay crop. Big sagebrush, spreading rabbitbrush, rubber rabbitbrush, and silver buffaloberry, have proven adapted to growing for living snowfences. Their snow harvesting efficiencies are being tested.

Contrary to the one-time common belief, heavy grazing of shortgrass prairie does not influence plains pricklypear cactus abundance. Early studies determined pricklypear ecology and developed mechanical control techniques. Digestibility of singed pricklypear was found to at least equal that of high-quality alfalfa. The pads produced good cattle gains when a protein supplement was fed. An efficient pricklypear harvester and a prototype of a despiner were also developed.

Spaying range heifers by the new K-R Technique proved highly satisfactory. Spayed heifers implanted with zeranol (Ralgro) gained 14% more than those without zeranol. Pasturing implanted spays and steers together did not reduce gain of either gender as compared with gains of those in pastures with only their own gender.

The most important accomplishment in reseeding of shortgrass range was finding why establishing blue grama seedlings is difficult. Morphological and physiological features prevent establishing crown (adventitious) roots in dry soil. Root elongation can be assured if surface soil is wet for two to four days when seedlings are two to six weeks old, a rare occurrence on the shortgrass prairie. Comparing blue grama seeding failures with crested wheatgrass seeding successes helped define objectives for breeding a superior blue grama.

Research to evaluate and improve legumes for shortgrass range showed that yellow-flowered alfalfa was most promising for areas with 12 inches or more of precipitation. Prairie milkvetch was the only native legume showing potential for rangeland improvement. It is extremely difficult to establish, especially on heavier soils because it has exceptionally small seeds and very poor seedling vigor.

Several studies have been conducted on replacing salt grass in saline-alkaline meadows with more productive and palatable grasses. Russian wildrye and crested wheatgrass were found better adapted than tall wheatgrass, smooth brome or other tested grasses. Research established that B horizon material on the soil surface was the primary obstacle to establishing new grass because it prevented soil water uptake. Chisel plowing followed by vertical-axis tilling did not increase surface salinity and alkalinity as much as moldboard plowing.

CPER Facts

**Administration-Owner:* U.S. Department of Agriculture, Agricultural Research Service. *Location:* Northwestern Weld County, Colorado, western edge of Central Great Plains;

13 miles northeast of Nunn, CO. *Address:* USDA-ARS GPSR, 1701 Center Ave., Fort Collins, CO 80526. *Phone:* (303) 484-8777. *Scientists:* 1 full time, 3 intermittent. *Support Staff:* Technicians: 5 full-time, several intermittent. Clerical: 2 full-time and 2 intermittent. *Acreage: 15,500 (800 provided by CVLCI); about 3,200 are revegetated cropland. Pastures:* 80. *Exclosures:* 31; mostly 2 acres each.

**Annual Precipitation:* 12.8", range 4" to 23", 81% April-Sept. *Mean Temperature:* 26 deg. F in Jan., 70 deg. F in July. *Frost-Free Period:* 133 days. *Wind Velocity:* 6.4 mph annually. *Elevation:* 5,250 to 5,550 feet ASL. *Topography:* Mostly rolling plains. *Soils:* Mostly sandy loam (Aridic Argiustolls and Ustollic Haplargids). *Range Sites:* Primarily loamy and sandy plains.

**Vegetation:* Blue Grama is dominant grass. Other important grasses and sedges are buffalo grass, red threeawn, western wheatgrass, inland saltgrass, needleandthread and needleleaf sedge. Important forbs are scarlet globemallow, slimflower scurfpea, and Russian thistle. Important shrubs are fourwing saltbush and woody buckwheat. Plains pricklypear is abundant. *Herbage Yields:* Average about 625 lbs. per acre, oven dried. *Carrying Capacity:* 4 acres per animal unit month.

**Cattle Data:* About 5,000 animal unit months of grazing. Cattle owned by Crow Valley members. Yearling heifers on moderately grazed native range gain about 240 lbs. per head May-Oct. and about 40 lbs. per head Nov.-Apr. On winter native range, long-yearling heifers need about 100 lbs. of 41% protein supplement and occasional storm hay.

**Regional Problems:* Low precipitation with 81% occurring in summer; frequent droughts; high evaporation and transpiration; short growing season; only well adapted grass is blue grama and it is poorly adapted for reseeding; many acres of abandoned cropland are thinly covered with low-quality forage plants; soils are highly erosive when not protected by vegetation; low soil fertility; lack of forage during early-growing-seasons and drought periods; and ranches are too small.

Future Research

Current research project priorities include: (1) using atrazine on rangeland to increase production and determining how atrazine works to increase grass growth; (2) establishing the effect of thinning blue grama stands on herbage and beef production, vegetational cover changes, and water and nutrients; (3) harvesting snow to produce hay and early spring pasture; (4) improving the germplasm of yellow-flowered alfalfa for the western shortgrass prairie; and (5) determining the ecology and physiology of various ecotypes of blue grama.

A study is planned to determine how soil depth and texture in the surface horizon, organic carbon, and enzyme activities affect blue grama growth. Scientists plan to develop a system to interface remotely collected data (e.g., by satellites) with mathematical models and decision-support systems (computerized models) to make remotely collected data more usable for managing natural resources.

Other research under consideration includes: (1) developing a system to reliably monitor the health of rangelands; and (2) developing basic knowledge and practices to more effectively utilize the limited precipitation of the shortgrass plains to improve herbage production.

The Central Plains Experimental Range was established because of need—to develop conservation and production practices. As times and technologies change, so do needs. Major accomplishments have been made to improve conservation and production. For rangelands to be managed as valuable and treasured resources with a benefit to land users, continued research is imperative. The knowledge base and tools of research have improved greatly in the last 50 years. This knowledge, continued public support, past experience, present programs and future goals could and should put the Central Plains Experimental Range in the forefront of developing new knowledge for shortgrass rangelands.

In observance of the Central Plains Experimental Range's 50 years of range research, two field days are being planned, July 14 and 15. Topics on the 14th will be oriented to ranchers, range managers and professional conservationists. The program July 15 is designed for the general public. Persons interested in attending should phone 1-800-669-3240 or write for further information.

Further Reading

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Cooperation: Range—Economics

Darwin B. Nielsen

Range scientists and economists often seem to have difficulty communicating with each other about the management of rangelands. I will first review some of the relationships I have observed over the past 25 years between economics and range. One of my biases has already surfaced: I do not like to use the terms "range scientists" and economists because in some people's minds this implies that "economists" are not scientists.

How each group perceives the other determines the nature of a cooperative program. There once seemed to be a good deal of distrust between the disciplines. These fears have somewhat dissipated today. Early cooperation might have had the following scenario: a range scientist has worked on the problem of range improvements for the past 25 years. After collecting all the field notes, publications, and summary data sheets together and dumping them on an economist's desk, the question is asked: "Do range improvements pay" or "Put some dollars and cents to this." Initially, the economist may wonder whether the range scientist means "sense" or "cents." In most cases this kind of cooperation was seldom productive. If the economist could decipher the data, the information was probably published without mentioning the range scientist who provided the data.

Several years ago, an agency decided to foster greater cooperation between their economists and other natural resource managers. The idea was to bring all of their people with some economic training together and put them through an intensive course in the economics of natural resource management. They could then return to the local management units with the ability to make an economic evaluation of various projects already done or in progress by the range staff. Since each management office did not have an economist, the trained people were expected to travel to an area and evaluate the projects. Consider the position of the range manager (range conservationist) who has worked to get funding for a project, obtained permittee cooperation, and initiated several range improvements. The total time to accomplish the project may have taken several years. Now here comes an "outside" economist, who may have never previously visited the area and announces that everyone must "cooperate" in an economic analysis of the project. The economist completes the evaluation in a few hours or days and finds that the expected benefit/cost ratio of the project is less than one, a very low internal rate of return, and a negative present value when the Office of Management and Budget (OMB) recommended discount rate is used. In effect, it is concluded that the range manager has worked for several years and has wasted "our" money. No wonder the word got out that "economists" were in the same category as the "auditors" and should be shunned.

Another approach that has been used to get the required economic analyses of range projects accomplished is to send range managers to an intensive two- or three-day short-course in economics. Supposedly, the range manager could then conduct economic evaluations of the projects during the winter and might even try to publish the results in a journal. The range manager probably received a scalding review of the paper from an economist, on how economics were used or misused. What is the problem? The range manager attempted to solve a very difficult economics problem on the basis of limited training and experience in economics. It might very well have been impossible to get two economists to agree on the proper way to solve the problem. The range manager comes away feeling that those "damn economists" have made the job much more difficult than it needs to be.

Working across disciplines at a university is usually very challenging. Departments tend to be empire builders and protect their "turf." Cooperation is encouraged if it brings money into a department or college, but is discouraged if it means putting money into another department or college. Problems can develop within a department among areas of specialization or when people perceive that others are encroaching on their special interests. An example might be a research project that compared the economic feasibility of feeding steers versus heifers. Animal scientists would think that the econ-

omists were on their turf when they measured the feed inputs and weighed the cattle once a week. Do you need a PhD in Animal Husbandry to weigh feed and cattle? A study of coyote predation on sheep led to an examination of coyote predation on deer; this displeased those in the wildlife department, especially when a newspaper article mistakenly said the economist was a member of the wildlife department staff.

For successful cooperative projects such as between economics and range, there are some things that should be done to increase the probability of success. First, the economist should have some input into the initial planning stages of the project. This may mean some tradeoffs in the number of replications used to establish a point on a relationship or curve versus fewer replications per point and an attempt to estimate more points on the curve. The usual result is that the range scientist never gets enough replications and the economist never gets enough points. If the economist does not like to get "down to earth" and be involved in the on-the-ground research, the range people may not see him again until the fieldwork is complete. The economist takes the data which took several years of research effort to develop and in a couple of months has an economic analysis of the project. The range scientist wonders "what the he--" the economist does. He caused trouble at the beginning of the project, never participated in the range field work, then took the data for a few days and wants to be the senior author on a publication. On the other hand, the economist wonders about these range people: they cannot get anything done in less than three to five years, and the results are never applicable, without serious reservations, to ranges in the next county.

There are the cases where the administrators decide there will be cooperation between the disciplines and, in their infinite wisdom, assign people to work together. Sometimes it even works. Usually it does not. One reason it does not work is because the people involved do not like each other. This attitude is caused by a lack of interest in or respect for the other profession. Some range people do not want to work with an economist because they think economics is not relevant to the problems they are studying. There are areas of basic research where this thinking is true. On the other hand, economics has something to contribute when range research projects concern management decision making. For example, a decision may deal with alternative uses of the rangeland and/or meeting given management objectives at least-cost; in such cases, economic factors are important.

Some economists think the whole area of range management is unworthy or not economically important enough for them to spend their valuable time on. Usually they are not too bashful about letting their feeling be known. A few scientists are so protective of the data they have collected that there is no hope for a cooperative study. Data in files can be much more valuable in cooperative studies than the limited exposure when published in one discipline. To get the most for the research dollars, the data should be used to the best advantage.

Single authorship has been mentioned as a potential problem for cooperative research. Another problem that can arise is who should be the senior author. These problems should be settled before the research is done. Decide if the results can be independently published. For example, articles that deal primarily with the biological side of the problem will be senior-authored by the range scientists and articles that are primarily economic in nature will be senior-authored by the economist.

There is a basic difference in the time perspective of range people and economists. Time costs money to an economist, while many range people are less concerned with how long it takes to bring about change in the use of the resource. For example, consider the nonuse requirement after a rangeland improvement treatment such as spraying or seeding. The immediate years after an investment is made have a potentially higher value since they are not discounted as heavy as the following years. The present value of a dollar benefit the immediate year after improvement is much higher than the dollar in year 20. If the nonuse is absolutely required to get the expected income stream, there should be no argument. However, if an extra nonuse year is added to give the plants some added rest but this does not significantly increase the expected production or income stream over the life of the improvement, then there would be reason to argue that that year's nonuse is too expensive and should not be required.

Some of the Environmental Impact Statements written in the past have serious problems in their time perspective relative to the benefits from range improvements. For example, one did not show any positive benefits for the first thirteen years after the investment in the improvement. At today's interest rates, no range improvement is economically sound that does not show a benefit until year 14.

Economists are accused of being mercenary because many insist on expressing everything in "dollar" terms. If a benefit cannot be valued in money terms, it does not get counted. Costs that are not market valued do not get counted. Perhaps there are some economists who would not count anything that was not market valued. However, nonmonetary or unmeasurable values should be considered in evaluating the worth of a project. What worries many economists is the "wild" unsubstantiated values that frequently are placed on aesthetics and other nonmarket goods and services. If some constraints are not imposed on these values, any project can be justified or rejected depending on the philosophy and conscience of the analyst.

Public land managers incur the ire of the economists when they make statements like: "We are not interested in the products produced on these lands, we are only interested in the land itself." When land management becomes an end or goal unto itself logical pitfalls and inconsistencies are possible. Is there anything wrong with preserving

the productive capacity of public rangelands for present and future generations? Obviously, there is nothing wrong with this goal unless a mistake is made about how the present and the future is weighed. Managing for this broad goal can lead to problems if consideration is not given to the outputs produced on the land. For example, assume that alternative mixes of outputs produced on the land leave the basic land resource in the same biological condition, yet one of these mixes has a considerably higher value than the others. Thus, the land manager should be concerned about the products on the land, since society would be better off if he chooses the mix with the greatest output.

Traditional range improvements for increased livestock use can be used as an example of the importance of cooperation. In the past, about the only land treatments that did not appear to be economical on rangelands were fertilization and pinyon-juniper control. Today, seeding or spray projects on rangeland with real productive potential must be well-planned to be economically feasible. The opportunity exists to do a better job of measuring the benefits from range improvements with cooperation among range, economics, wildlife, and animal science. A reasonably good system of accounting for the increase in quantity of forage produced has been developed but we have not given enough effort to measuring the effects of an improvement in the quality of forage.

A broader view of the uses of rangelands requires cooperation among disciplines if rangeland resources are going to make their optimum contribution to human welfare. A much wider variety of demands is being imposed on public rangelands. Often these demands result in potential benefits that are difficult to measure. The attitude or philosophy that these demands are mutually exclusive (one use can only come in or increase at the expense of another) seems to be coming more prevalent. A cooperative attitude among disciplines involved in resource management will result in more decisions being made by professionals and fewer decisions by court order.

Capital Corral

Ray Housley
Washington Representative

There are more buzzards than carcasses.
Robert Mueller

The slow pace of appointments to political jobs (and some that aren't supposed to be political) was matched only by the lack of enthusiasm in some quarters for certain of the proposed nominees, as May rolled around with many key jobs unfilled. While the delay may not set a new record, things moved as slowly as we've seen in 20 years.

One top appointment that was made early and greeted with wide approval was that of **Jack Parnell to be Deputy Secretary of Agriculture.** Parnell follows the popular **Peter Meyers,** who now works for the Pork Producer Council in Washington. Parnell, a successful rancher, restaurant owner, auctioneer and banker in California, has an impressive background in state government, too. He served two hitches in the California Department of Food and Agriculture, the last one as its Director. Earlier, he was Director of the California Department of Fish and Game. In both jobs, he built a reputation for squarely facing tough issues and making sound decisions. He's said to work hard to bring opposing interests together to understand both sides of issues.

James Cason was named as the intended nominee for Assistant Secretary of Agriculture for Special Services, where he would oversee the Soil Conservation Service and the Forest Service. Cason, a Deputy Assistant Secretary of the Interior for Lands and Minerals, was earlier special assistant to the Director of the Bureau of Land Management; he worked in the private sector in Oregon, and was campaign manager for Lynn Engdahl in his unsuccessful bid for Congress in 1979-80. The proposal to nominate Cason came as a surprise to many, and it drew fire from a number of conservation organizations who cited his reputed role in controversial oil, gas and minerals actions, and in the threatened species classification of the northern spotted owl.

The President also announced his intention to nominate Charles E. Hess to be Assistant Secretary of Agriculture for Science and Education, replacing Orville Bentley. Hess has been Dean of Agricultural and Environmental Sciences at the University of California, Davis, and held scientific and academic posts at several institutions. He is a past president of the American Society for Horticultural Science, and holds degrees from Rutgers and Cornell, where he earned a Ph.D. in 1957.

David O'Neal is the intended nominee for Assistant Secretary of the Interior for Lands and Minerals. He has been Assistant Secretary of Labor for Mine Safety and Health, and served as Associate Director of BLM in 1986-87. A pharmacist, he has been a county sheriff and Lieutenant Governor of Illinois.

Delos Cy Jamison, proposed nominee for Director of the Bureau of Land Management, has been on the minority staff of the House Interior Committee. He has worked at the Department of the Interior, and was a public affairs specialist for the BLM in Billings, MT, earlier in his career. Jamison, 39, headed the Montana Republican Convention delegation. Jamison and O'Neal, who will require Senate confirmation, were expected to encounter less opposition than Cason.

Meanwhile, the National Commission on Public Service, headed by Paul A. Volcker, published its 64-page report calling for major changes in the federal personnel system. Recommendations called for reducing political appointees from 3,000 to 2,000, because tripling their numbers between 1965 and now (a period when programs and other federal employment were relatively stable) has not made government more effective. The Commission also called for development of qualification statements for all jobs—and making appointments based on those merits.

Dennis Child, ARS, and Don Nelson, FS, are the latest SRM members to become Congressional Fellows. Child is working for Sen. Bumpers (D., AR) and Nelson is on the Staff of Sen. Baucus (D. MT).

The natural resources share of the federal budget declined 50% in ten years, according to a study by Neil Sampson of the American Forestry Association. The Natural Resources Council of America released the study report March 20. Neil's graphic report reveals that natural resources got 3% of the federal budget in 1978, but only 1.5% in 1989. The Bush Budget would further reduce that to 1.1% in Fiscal Year 1990.

Support for BLM and FS range budgets came from Congressman Bruce Vento (D., MN), Chairman of the House Interior Subcommittee on National Parks and Public Lands when he testified before the Appropriations committee April 25. He presented a strong argument in his illustrated testimony and in an earlier letter for increasing the range budget of both agencies to $40 million, as recommended by SRM.

Chairman Vento held a hearing on a bill to reauthorize BLM April 11. The hearing turned into a review of several bills to increase grazing fees. While many who keep track of the fee controversy are predicting some modest increase well below the "fair market" level), it seems clear the Administration will not initiate nor happily support an increase.

Wyche Fowler (D., GA) hopes that his bill, The Farm Conservation and Water Protection Act of 1989, will become the major conservation title in the 1990 Farm Bill. Originally introduced late in last year's session, the bill was primarily focused on encouraging LISA-Low-input,

Sustainable Agriculture. Its provisions on water quality and certain other areas were difficult to follow and implement. After considerable consultation and staff work, the bill is ready for another round of consideration, along with a proposal by Sen. Lugar (R., PA), whose staff has been working on alternative approaches.

Cong. Glenn English (D., OK) had a comment on the Farm Bill when he spoke at the North American Wildlife and Natural Resources Conference in March. "I don't believe in giving the Secretary of Agriculture much discretion." English is a subcommittee chairman on the House Agriculture Committee.

Current Literature

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 review—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).

Annual Rangeland Fertilization: Effects on Vegetation and Animal Production at the San Joaquin Experimental Range; by William E. Frost and Don A. Duncan; 1989; Calif. Agric. Tech. Inst. CATI/880503; 15 p. (San Joaquin Expt. Range, 24075 Highway 41, Coarsegold, Cal. 93614) A synthesis of fertilization trials covering a period of nearly 50 years on annual grasslands, where "probably the most consistent and profitable response to range fertilization practices of any range type" has been shown.

Beef Cattle Report, 1989; by Univ. Neb., Agric. Res. Div.; 1988; Neb. Agric. Res. Div. Misc. Pub. 54; 68 p. (Neb. Agric. Expt. Sta., Univ. Neb., Lincoln, Neb. 68583). Includes reports on fertilizing subirrigated meadows, grazing cornstalks, milk production rate effects on forage intake, and overwintering effects on yearling gains on summer pasture.

Control of Wasatch Milkvetch *(Astragalus miser* var. *oblongifolius)* and Associated Species on Mountain Rangeland; by M.C. Williams and M.H. Ralphs; 1989; Weed Tech. 3(1):110-113. (USDA, ARS, Poisonous Plant Res. Lab., 1150 E. 1400 N., Logan, Utah 84321) Triclopyr at 2 lb. a.e./a. gave 100% control of Wasatch milkvetch, mountain big sagebrush, and mulesears.

Effects of Supplementation on the Ingestive Behaviour of Grazing Steers; by C.T. Dougherty, T.D.A. Forbes, P.O. Cornelius, L.M. Lauriault, et al.; 1988; Grass and Forage Sci. 43(4):353-361. (Dept. Agron., Univ. Ky., Lexington, KY. 40546-0091) Concluded their data supported the "current concepts that herbage intake of grazing animals is determined by hunger-satiety status, by the forage harvesting capacity of the mouth and tongue, and the properties of the sward."

Establishment of Annual Clover for Increased Cattle Production on Annual Rangeland in the Central Sierra Foothills; by William E. Frost, Neil K. McDougald, W. James Clawson, and Don A. Duncan; 1989; Calif. Agric. Tech. Inst. CATI/880603; 11 p. (San Joaquin Expt. Range, 24075 Highway 41, Coarsegold, CA 93614) "Seeding of annual legumes, accompanied by proper grazing management, produced an increase in carrying capacity and livestock production over the five-year trial for a one-time, relatively low cost."

Estimating Weather and Forage Relationships; by Kent Olson, Mel George, and Al Murphy; 1989; Univ. Calif. Range Sci. Rep. 22; 15 p. (Dept. Agron. and Range Sci., Univ. Calif., Davis, Calif. 95616) Discusses and analyzes the relationships between weather and forage production, and uses data from the Sierra Foothill Range Field Station in developing subjective forage projections for use in stocking rate decisions.

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

Food Aversion Learning: Conditioning Lambs to Avoid a Palatable Shrub *(Cercocarpus montanus);* by E.A. Burritt and F.D. Provenza; 1989; J. Anim. Sci. 67(3):650-653. (Dept. Range Sci., Utah State Univ., Logan, Utah 84322). Determined that lambs could be conditioned to avoid a palatable shrub by inducing aversion through administation of drugs causing gastrointestinal illness.

Forage Ingestion: Effects of Sward Characteristics and Body Size; by Montague W. Demment and Gregory B. Greenwood; 1988; J. Anim. Sci. 66(9):2380-2392. (Dept. Agron. and Range Sci., Univ. Calif., Davis, Cal. 95616). Concluded from their model that (1) the small ruminant derives an increasing proportion of its energy from the cell contents and (2) animal selection for production has produced plastic ingestive and processing behavior and has increased body size in ruminant species.

Forage Lignins and Their Effects on Fiber Digestibility; by H.G. Jung; 1989; Agron. J. 81(1):33-38. (Dept. Anim. Sci., Univ. Minn., St. Paul., Minn. 55108) Outlines the current knowledge of forage lignin chemistry and how lignin interacts with rumen fermentation of forage cell walls; a paper from a symposium on forage digestibility and intake.

Grazing History, Defoliation, and Competition: Effects on Shortgrass Production and Nitrogen Accumulation; by Victor J. Jaramillo and James K. Detling; 1988; Ecology 69(5):1599-1608. (Dept. Range Sci., Colo. State Univ., Fort Collins, Colo. 80523) Concluded that intensive defoliation on prairie dog colonies resulted in genetically based morphological and physiological differentiation in blue grama to reduce grazing severity.

Histological and Physical Factors Affecting Digestibility of Forages; by D.E. Akin.; 1989; Agron. J. 81(1):17-25. (USDA, ARS, Agric. Res. Center, P.O. Box 5677, Athens, Ga. 30613) Identifies and locates structural barriers within various forages that prevent fermentation and degradation (i.e. utilization) of the potential nutrients; a paper from a symposium on forage digestibility and intake.

Home Ranges of Elk in an Arid Environment; by Scott M. McCorquodale, Kenneth J. Raedeke, and Richard D. Taber; 1989; Northwest Sci. 63(1):29-34. (Wildlife Resource Mgt., Yakima Indian Nation, P.O. Box 151, Toppenish, Wash. 98948) Concluded that high forage quantity prevailed over quality in the prairie-like habitat of the shrub-steppe biome in Washington in providing habitat for supporting viable elk populations but that a relatively large, disturbance-free area of continguous habitat was required.

Index to Information on Insects Associated with Western Wildland Shrubs; by B. Austin Haws, Alan H. Roe, and David L. Nelson; 1988; USDA, For Serv., Gen. Tech. Rep. INT-248; 296 p. (Intermountain Res. Sta., 324 25th St., Ogden, Utah 84401) A computer-generated compilation of bibliographic and collection information about insects associated with wildland shrubs in the western United States.

Influence of Cow Weight Change on Cow Reproductive Performance and Calf Performance; by R.W. Godfrey, F.M. Rouquette, Jr., and R.D. Randel; 1988; J. Prod. Agric. 1(3):221-224. (Agric. Res. Ext. Center, Texas A&M Univ., Overton, Texas 75684) Based on grazing studies on bermudagrass pasture, cows stressed to the point of significantly reducing weaning weights and pregnancy rates were uneconomic and required additional time and nutrients to make recovery of body condition prior to calving.

Kinetics of In Vitro Cell-Wall Disappearance and In Vivo Digestion; by D.S. Fisher, J.C. Burns, and K.R. Pond; 1989; Agron. J. 81(1):25-33. (USDA, ARS, Dept. Crop Sci, N. Car. State Univ., Raleigh, N. Car. 27695-7620) Used modeling to help interpret cell-wall disappearance/digestion in the ruminant as affected by the interrelationships of variable rate of passage, particle size, and extent and rate of particle size reduction; a paper from a symposium on forage digestibility and intake.

Management Choices: Native, Interseeded Native, or Tame Pastures; by F. Rudolph Vigil, Steven Fransen, and Don G. Huber; 1985; S. Dak. Agric. Expt. Sta. Bul. 685; 26 p. (Agric. Expt. Sta., S. Dak. State Univ., Brookings, S. Dak. 57007) A report of cattle performance and economic returns under complementary pasture plans at the Pasture Research Center in North Dakota.

Noxious Brush and Weed Control; Range and Wildlife Management; Research Highlights—1988; by Loren M. Smith and Carlton M. Britton; 1988; Texas Tech Univ., Lubbock, Texas (Vol. 19); 44 p. (Dept. Range & Wildl. Mgt., Texas Tech Univ., Lubbock, Texas 79409) An annual summary of the results of research directed to controlling noxious plants in Texas and to management practices subsequent to control treatments.

Nutritive Quality of Foliar Disease Resistant and Susceptible Strains of Intermediate Wheatgrass; by J.F. Karn, J.M. Krupinsky, and J.D. Berdahl; 1989; Crop Sci. 29(2):436-439. (USDA, ARS, Northern Great Plains Res. Lab., P.O. Box 459, Mandan, N. Dak., 58554) This study demonstrated that nutritive quality of intermediate wheatgrass is diminished by leaf spot diseases, and that leaf spot resistant plants maintain a higher nutritive quality in the presence of disease.

Performance of Some Native and Introduced Grasses in a Semiarid Region of Western Canada; by T. Lawrence and C.D. Ratzlaff; 1989; Can. J. Plant Sci. 69(1):251-254. (Research Station, Agric. Can., Swift Current, Sask. S9H 3X2) Concluded that native grasses in the arid prairie region of Canada were too short-lived and low-yielding compared to introduced species to warrant genetic development efforts by grass breeders.

Revegetation by Land Imprinter and Rangeland Drill; by Warren P. Clary; 1989; USDA, For. Serv. Res. Paper INT-397; 6 p. (Intermountain Res. Sta., 324 25th St., Ogden, Utah 84401) Compared the land imprinter and rangeland drill in revegetating a wildfire burn site in the Wyoming big sagebrush vegetation type.

Soil and Plant Water Relations in a Crested Wheatgrass Pasture: Response to Spring Grazing by Cattle; by J.M. Wraith, D.A. Johnson, R.J. Hanks, and D.V. Sisson; 1987; Oecologia 73(4):573-578. (Dept. Range Sci., Utah State Univ., Logan, Utah 84322-5230) Grazing versus nongrazing did not materially increase soil moisture levels except at lower depths, the latter possibly enhancing the competitive ability of deep-rooted shrubs such as big sagebrush.

Structural Polysaccharides in Forages and Their Degradability; by R.D. Hatfield; 1989; Agron. J. 81(1):39-46. (USDA, ARS, Dept. of Agron., Univ. Wisc., Madison, Wisc. 53706) Based on a synthesis of the literature, it was concluded that the extent and rate of degradation of forage cell walls is governed primarily by the matrix interactions rather than the individual contribution of the various polysaccharides; a paper from a symposium on forage digestibility and intake.

Supplement to SB 659: Adjusting and Forecasting Herbage Yields to the Intermountain Big Sagebrush Region of the Steppe Province; by Forrest Sneva; 1989; Ore. Agric. Expt. Sta. Bul. 673; not paged. (Agric. Expt. Sta., Ore. State Univ., Corvallis, Ore. 97331) Updates and broadens the original 1983 publication by providing additional weather data for the region.

Taxonomy, Life History, and Ecology of a Mountain-mahogany Defoliator, *Stamnodes animata* (Pearsall), in Nevada; by Malcolm M. Furniss, Douglas C. Ferguson, Kenneth W. Voget, J. Wayne Burkhardt et al.; 1988; USDI, Fish & Wild. Res. 3; 16 p. Reports a detailed study of a looper that seriously impacted extensive areas of curlleaf mountain mahogany in Nevada.

2,4-D and Mowing Effects on Seed-head Flies Used for Spotted Knapweed Control; by Jim M. Story, Keith W. Boggs, William R. Good, and Robert M. Nowierski; 1988; Mon. AgRes. 5(3):8-11. (Agric. Expt. Sta., Mon. State Univ., Bozeman, Mon 59717) With proper timing and application levels, 2,4-D but not mowing was compatible with biological control with the two fly species.

President's Plan of Work for 1989

Emphasis for 1989

Increase awareness of citizens that proper range management benefits all of society.

1. Maintain our leadership position as the primary organization speaking for the proper care and management of rangelands wherever they occur.
2. Improve communication among Sections to result in more SRM education on the ground which will stimulate membership expansion and retention.
3. Continue to develop a program of range management excellence for which SRM can be proud.
4. Build/rebuild stronger working relationships with other resource-based organizations.
5. Continue Society Task Groups and encourage outreach of their efforts.

Many of the objectives listed have either been completed or had substantial progress made on them at the Billings meeting. This attests to the high level of activity by SRM committees.

Committee Objectives

Washington, D.C. Liaison Committee

1. Continue to evaluate role of Washington, D.C. liaisons in fulfilling long-term and short-term goals of SRM and recommended changes to the Board as appropriate.
2. Increase visibility and influence of SRM as the professional organization that speaks for proper rangeland management in Washington, D.C. by:
   a. Developing and maintaining close liaison with Washington staff of professional societies and citizen conservation organizations through Renewable Natural Resources Foundation, Natural Resources Council of America, and informal contacts.
   b. Representing the Society's positions on professionalism and other issues to heads of federal agencies.
   c. Provide information on SRM positions on issues to members of Congress and staff through invited formal testimony and written statements and through personal contact.
3. Assist Finance Committee in developing new funding sources for Society programs and projects. (Lead is Finance).
4. Inform officers, committee chairs, and members of developing issues and activities in the Capital through regular columns in *Rangelands* and correspondence.
5. Assist National Capital Section to arrange meetings with, or in, foreign embassies of countries where rangeland is important.

Affiliation Committee

1. More actively work both within the context of Grazing Lands Forum, Natural Resources Council of America, and Renewable Natural Resources Foundation and beyond, when necessary, to develop and activate workable mechanisms for cooperation in subject areas of mutual interest. Push for SRM leadership in this effort.
2. Prepare recommended correspondence or contacts with affiliate organizations for President or Executive Vice-President.
3. Advise affiliate organizations of SRM meetings, policies, and positions.
4. Be alert to opportunities for deserving SRM members to be nominated for awards in other societies and organizations. Cooperate with Awards Committee for implementation of this task.
5. Insure that all committee members are active; if necessary, suggest replacement representatives.

Awards Committee

1. Vigorously seek nominations for all SRM awards and make recommendations to the Board at the summer meeting for approval.
2. Develop appropriate news releases on SRM award winners in concert with I&E Committee. Amend committee handbook to contain these procedures.
3. Consider proposals for new SRM awards and make recommendations to the Board after assessing adequacy of existing structure and procedure to accomplish objectives.
4. Work with Affiliations Committee and Executive Vice-President on an as needed basis regarding outside of SRM awards using completed nominations for SRM awards as a base.
5. Maintain a file of recent past and current SRM awards nominations and runners-up to use for outside awards programs of other organizations and societies.

Budget Committee

1. Oversee use of 1989 budget to best achieve SRM objectives.
2. Develop proposed budget for 1990.

Commercial Affairs Committee

1. Complete committee handbook.
2. Continue to work with VREW to clarify their role and purpose in the context of modern range management.
3. Evaluate trade show price structure for commercial SRM members in consultation with the Finance Committee and report any recommendations to the Board at the summer 1989 meeting.
4. Assist in recruitment of new commercial members while working to retain present members.

Elections Committee

1. Count ballots for the 1989 election and verify winners.

Employment Affairs Committee

1. Continue to review role of Employment Affairs Committee from recent plans of work and recommend needed changes.
2. Continue and improve employer/employee information exchange (employment room/job bulletin board) at SRM meetings.
3. Continue to investigate computerized employment services programs for range-related jobs. Develop proposals for potential grants from the communication industry to support such services for non-profit organizations such as SRM.
4. Continue to summarize where range management graduates have been employed in the last 5Ç7 years. Cooperate with the Range Science Education Council and Professional Affairs Committee (Lead is Employment Affairs).
5. Continue to review accreditation standards in terms of past, present, and future employment opportunities. Assist Range Curricula Accreditation Panel and Professional Affairs Committees with this task.

6. Develop new approach to assess non-traditional and international employment opportunities. Work with employment office at university campuses to access current information and survey job trends in natural resources. Work with Student Affairs and International Affairs committees (Lead is Employment Affairs).

Excellence in Range Management Committee

1. Develop ways and means to effectively promote the mission and goals identified at the Billings annual meeting.
2. Conduct the Excellence in Range Management survey and lead/-facilitate discussions with the Board of Directors at the 1989 summer meeting.
3. Conduct the Excellence in Range Management survey at the 1990 annual meeting.
4. Sponsor the Quest for Excellence Symposium at the 1990 annual meeting. Use the results of the survey to kick off the symposium.

Finance Committee

1. Evaluate SRM money-making projects as appropriate.
2. Evaluate levels of compensation for the EVP position.
3. Develop a uniform procedure for committees to follow when requesting SRM funding to carry out activities.
4. Recommend policy and procedure for an Annual Meeting Revolving Fund.
5. Evaluate use and desirability of an SRM credit card.
6. Work with EVP to evaluate SRM staff benefits and recommend appropriate steps toward implementation of changes.

History-Archives-Library Committee

1. Monitor, maintain and improve archives at Coe Library. Specifically, determine how up to date they are and if not current, make requests of appropriate officers for material to be submitted.

Information and Education Committee

1. Support Public Affairs Committee with a dissemination strategy for their information summary on range condition.
2. Spearhead Newsletter Award for 1990.
3. Sponsor Poster Session at 1990 Annual Meeting as preparatory to a 1991 workshop in Washington, D.C.
4. Assist Denver office in publicizing information on newly elected officers in local, regional, and national publications.
5. Assist Awards Committee in publication of information on recipients of awards at the Billings meeting in local and regional publications.
6. Finalize draft Section Handbook for I&E committees.
7. Prepare Speaker's Brochure.
8. Research potential for "Garment Pocket Information Insert" on Rangelands and SRM.
9. Study the desirability, feasibility and additional work load necessary to incorporate video taping of any or all of SRM annual meeting. If at all feasible, propose a trial project.

International Affairs Committee

1. Continue publication of the International Range Newsletter.
2. Organize 1990 International Rangeland Development Symposium with invited presentations.
3. Develop network representatives to serve as focal points/liaisons for promotion of international range management programs.
4. Establish procedures/guidelines for use by colleagues in other countries to foster the organization of sections/societies for the proper recognition and management of range resources.

Leadership Development Committee

1. Initiate remake of the video on Organization Structure of the Society. Update information and video technology to improve this information transfer vehicle.
2. Initiate and organize a "Speaker Training Staff" of three to five members. Prepare to conduct (Busby model) training sessions to members of the Society for the 1990 annual meeting. Coordinate with Professional Affairs.
3. Initiate and organize two sessions (20-30 minutes each) to present to the Advisory Council (Reno) that will improve audience's ability to conduct meaningful meetings.
   a. Search available sources for information and instructional aids about setting agendas and managing small groups for productive meetings; and establish an appropriate "message" to deliver to the Advisory Council (report at Kamloops) and develop a program for presentation at Reno.
   b. Identify student members capable and willing to perform a "mock-up" demonstration of Parlimentary procedures (report at Kamloops). Develop a program for the Advisory Council at Reno based on the mid-year report.
4. Prepare long range strategic plan for continual leadership development programs to be presented to SRM members, for development of a committee handbook.

Membership Committee

1. Increase membership to 5050 by close of 1989.
2. Have 1/2 of the Sections using a telephone tree by the close of 1989.
3. Reduce drop out rate by having Sections actively followup in Jan. and Feb. of 1990 with personal contacts with persons not renewing for 1990.
4. Assist National Capital Section in April 1989 phonathon.
5. Increase membership retention of new members by a followup contact by the Denver Office 6 months after the member joints—provide feedback to Section leaders on effectiveness of their Section programs based on these contacts.
6. Spearhead October-December 1989 membership drive.
7. Have 1/2 of the Sections publishing a directory of their members by the close of 1989.
8. Work with Denver to initiate a system to send recruiters a postcard when a person sends in a membership application.
9. Work with Denver to publish the names of recruiters in the SRM notes or *Rangelands*.

Nominating Committee

1. Identify, screen and present nominations for SRM offices using one-year trial procedure adopted by Board of Directors at 1988 summer meeting.
2. Evaluate trial procedure and recommend action for the Board at the 1989 summer meeting.
3. Continue to develop and implement a plan for obtaining more Section input on nominations.
4. Evaluate effectiveness of current methodology in identifying local news media for timely news releases of newly elected officers. (Cooperate with I&E).

Planning Committee

1. Bring the long range plan adopted in 1984 up to date through in-depth evaluation and reports by the various committees and recommend changes to the Board by 1990 winter meeting.
2. Complete the committee/task group monitoring procedure, test it, and report progress regarding its usefulness to the Board by 1990 winter meeting.
3. Evaluate SRM organization structure and function (John Brock article) and make recommendations by the 1990 annual meeting.
4. Evaluate opportunities and processes to increase the productive, open discussion of issues that are of importance to the Society and profession.
5. Identify and work with Sections, committees, the Advisory Council, and the Board to improve the transfer and continuity of roles.
6. Assist the Society in dealing with mission and image issues.

7. Continue initial discussion of 50th Anniversary Celebration of the establishment of SRM.

Professional Affairs Committee

1. Continue evaluation of SRM in our role as the professional range management society, especially with regard to our image, name, and other activities or actions.
2. Develop and conduct a workshop at the 1990 annual winter meeting on internal professionalism.
3. Sponsor breakfasts or related activities for female range management professionals and provide a forum for continued dialogue on professionalism.
4. Work with the Mexico Section regarding plans for the 1990 summer meeting workshop in Monterrey, Mexico.
5. Continue working with RSEC and Employment Affairs Committee to develop up-to-date employment summaries of recent range management graduates.
6. Review SRM Code of Ethics.
7. Review current appropriateness of Certified Range Consultant Standards in cooperation with the Certification Panel (Professional Affairs is lead).

Public Affairs Committee

1. Become intimately conversant with the current committee handbook and clearly utilize guidelines.
2. Develop, review and/or revise statements of SRM policies, resolutions and positions as needed for approval by the Board.
3. Develop and recommend action to the Board on proposed and current public policies as appropriate.
4. Study the feasibility, practicability, and need for expanded SRM policy positions on U.S. federal range management policy. Work closely with Washington, D.C. representatives.
5. Recommend a strategy to address land management policy development issues and concerns as initially requested by the Nevada Section.

Publications Committee

1. Serve as the focal group in SRM to evaluate and assess whether or not all publications excepting the *Journal of Range Management* and *Rangelands* should be published.
2. Continue work on improving *Journal* indexing and the procedures relating to symposia proceedings and annual meeting abstracts.
3. Develop and assess more proactive marketing methods for current and future SRM publications.
4. Clarify the publication development process through consultations with authors, committees and the Denver office staff.
5. Cooperate with Technology Transfer on possible publications on topical subjects selected from existing *Rangelands* and *Journal of Range Management* articles with appropriate introductions.

Rangeland Reference Area Committee

1. Finalize and implement criteria for evaluating rangeland reference area exclosures.
2. Prepare report on the evaluation of alternatives for housing and maintaining information on rangeland reference areas.
3. Continue efforts to catalog and describe rangeland reference areas by section.
4. Maintain committee visibility through publication and talks.

Research Affairs Committee

1. Develop a strategic plan for research funding.
2. Develop plans for a research funding workshop for the 1991 annual meeting.
3. Work to retain range research funding authorizations in the 1990 Farm Bill.
4. Conduct an overall survey on research done on rangelands including scientists of all ages whether or not members of SRM.
5. Work to better understand U.S. range research programs.
6. Evaluate the perspective that future range research is strongly, if not dominantly influenced, even directed, by the *JRM* editorial policy. Conduct dialogue with the *JRM* editorial board. Determine whether or not the results of the evaluation are scientifically and professionally desirable and report any recommendations to the Board at the 1990 annual meeting.
7. Assess the impact of the image of range management on range research.

Student Affairs Committee

1. Continue the present student affairs activities.
2. Develop a Range Youth Education workshop for the Reno 1990 annual meeting. Include:
   a. Evaluation of current SRM youth activities and appropriate recommendations.
   b. Establishment of additional, broad-based, long term goals with strategies and tactics of achieving them.
   c. Consider the list of 1988 objectives as discussion items.
3. Develop criteria for administering the Masonic Scholarship Report at the 1989 summer meeting.
4. Supervise development of a manual for a Boy Scout rangeland management merit badge should the Boy Scouts of America respond favorably to our request for a merit badge.
5. Evaluate incentives to student chapter displays at the SRM annual meeting. If additional funding is needed, seek through appropriate sources.

Technology Transfer Committee

1. Continue to identify appropriate opportunities and mechanisms for SRM to exercise leadership in technology transfer. Specifically work with Professional Affairs Committee to determine whether or not federal and state agencies will officially recognize and accept professional development opportunities offered at SRM meetings.
2. Evaluate video taping technology and how it can be made more effective in SRM's technology transfer role.
3. Examine the SRM long range plan and develop and explore ways for the committee to function within it.
4. Complete committee handbook.
5. Evaluate the role and desirable interaction between the committee and VREW.
6. Evaluate, assess and recommend a publication format SRM could develop from *Rangelands* and *Journal of Range Management* articles on specific subjects of current interest. Cooperate with Publications Committee.

Councils - Boards - Panels - Task Groups

Advisory Council

1. Work closely with Board regarding Section and member perspectives.
2. Coordinate Section activities with SRM Plan of Work.
3. Provide leadership, cooperation and motivation toward accomplishing SRM objectives.

Council of Past Presidents

1. Work with Planning Committee to more clearly define the role of the Council of Past Presidents in SRM. (Lead is Planning Committee).
2. Work with Board of Governors of the Endowment Fund in promotion of the fund and fund raising activities. (Lead is Endowment Fund Board of Governors).
3. Assist History-Archives-Library Committee in developing consensus on the future of the archives and the SRM Depository Library. (Lead is History-Archives-Library Committee).

4. Study ways the Society could more effectively utilize its members' talents in furthering the SRM mission. This relates specifically to retired members who could voluntarily contribute significant blocks of time but cannot cover expenses. Suggest examples of kinds of projects and funding possibilities.

Endowment Board of Governors

1. Continue to seek new sources of funds for the Endowment Fund.
2. Recommend to Board of Directors specific appropriate uses for Endowment Fund interest to be considered after the fund reaches $100,000. Develop a procedure on evaluation of requests.
3. Evaluate and suggest to the Board of Directors various forms of recognition for individual or group contributions to SRM.

Journal of Range Management Board

1. Review, edit, and recommend acceptance or rejection of articles submitted to *JRM*.
2. Work with Production Editor to maintain diversity of *JRM* articles to best serve the broad scientific foundation of SRM.
3. Evaluate idea of annually printing MS and PhD theses and dissertation titles, names and institutions similar to that done in Agronomy News. Recommend procedure for accomplishment.
4. Develop and conduct a workshop on scientific writing/technical editing for the 1990 Reno annual meeting. Include discussion of editorial policy. Workshop should not be in conflict with technical concurrent sessions.
5. Cooperate with Research Affairs regarding the perspective that future range research is strongly, if not dominantly influenced, even directed by the *JRM* editorial policy. Determine whether or not the results of the evaluation are scientifically and professionally desirable and report any recommendations to the Board at the 1990 annual meeting. (Lead is Research Affairs).
6. Evaluate publication of interpretive summaries of *Journal of Range Management* articles in *Journal of Range Management* (consult with *Rangelands* Editor Gary Frasier).

Rangelands Editorial Board

1. Review, edit and recommend acceptance or rejection of articles submitted to *Rangelands*.
2. Maintain diversity of articles for *Rangelands* to best serve the broad interests of SRM members.
3. Evaluate alternative strategies and tactics aimed at making *Rangelands* a more "popularized" magazine with the potential reality of a much larger readership.

Range Consultant Certification Panel

1. Evaluate and approve applicants for certification by SRM.
2. Assist the EVP in maintaining and distributing list of certified consultants.
3. Assess desirability of continuing education program for GRMC and, if desirable, identify components of said program and how to implement one.
4. In light of the relatively few Certified Range Consultants, review the need for the program in SRM.
   Specifically:
   a. Compare SRM's certification program with that of similar societies including initial fee, yearly fees, requirements, etc.
   b. Determine if: (1) the designation of "Certified Range Con-
      b. Determine if: (1) sultant" is of any benefit in obtaining employment and
      employers make any distinction in hiring.
   c. If there is no benefit or if employers make no distinction, determine the cause, e.g. lack of publicity about the program by SRM, lack of marketing by individual consultants, too many "non-certified" consultants available, etc.
   d. Attempt to determine why so few members of SRM have become certified. Are our fees too high, are there no tangible benefits, or what?
5. Cooperate with Professional Affairs in review of certification standards.

Range Curricula Accreditation Panel

1. Continue to review role of Accreditation Panel as outlined in long-range plan and procedures outlined in handbook and recommend needed changes.
2. Continue to evaluate current accreditation standards as they may relate to changing needs within the profession and for the future employment market. Coordinate with Professional Affairs and Employment Affairs.
3. Evaluate candidate schools for accreditation.
4. Maintain and distribute a list of accredited schools.
5. Encourage establishment of range management curricula in universities inside and outside the United States as applicable.

Annual Meeting Handbook Task Group

1. Review, revise and update the annual meeting handbook. Draft submitted at the 1989 summer meeting and final by the 1990 annual meeting.

Conservation Reserve Program Task Group

1. Serve as a focal point for CRP activities within SRM and maintain liaison with CRP activities of other organizations.
2. Help educate operators with CRP land to understand range management principles in managing that land, both during and after the CRP. This embodies a leadership role with other federal, state and local organizations to highlight wildlife, water quality, soil erosion control and other benefits.
3. Work with USDA and other federal, state and local agencies and organizations to identify needed legislation, policy and procedures to maintain permanent vegetative cover of CRP lands beyond 10 years.
4. Organize and conduct a symposium on the objectives 2 and 3 to be held during the 1991 annual meeting in Washington, D.C.

Coordinated Resource Management Task Group

The 5-Year Objectives

1. The CRM concept will be in common use in all agencies.
2. Range schools will integrate the CRM concept into their curricula.
3. SRM membership will be aware of the CRM concept.

1989 Objectives

1. Develop and conduct a CRM symposium at the 1990 winter meeting.
2. Develop a CRM guide booklet in cooperation with NACD and SWCS.
3. Introduce the CRM concept with the National Cattlemen's Association.
4. Serve as the SRM focal group in supporting the State Advocacy Team concept in concert with NACD and SWCS. Add more teams (currently 18 states) as opportunities arise.

Range Cover Type Task Group

1. Complete initial drafts by 1989 summer meeting; review, revise, and edit by 1990 annual meeting.

Remote Sensing Task Group

1. Conduct a remote sensing work session at the 1990 annual meeting.
2. Organize a symposium on Rangeland Remote Sensing for the 1991 annual meeting.
3. Serve as the SRM focal group on all rangeland remote sensing activity and communication.

Small Tract Range/Pasture Task Group

1. Targeting horses specifically, develop an educational program and program materials to make horse owners cognizant and appreciative of the benefits of good management.

Summer Meeting Handbook Task Group

1. Prepare draft handbook by 1989 summer meeting and final version by 1990 annual meeting.

Unity in Concepts and Terminology Task Group

1. Continue professional dialogue on terminology, ecological concepts, and use interpretations of ecological data relating to range classification, inventory and monitoring.
2. Continue to seek agency commonality and unit in technology and methodlogy relating to rangeland condition and trend.
3. Based on progress in first two items, update and publish a follow-up report on "Assessment of Rangeland Condition and Trend in the United States—1989" 2 years after the publication of that report.
4. Review and publish an updated version of glossary terms related to range classification, inventory and monitoring at the same time as the assignment listed above.
5. Stay in close communication with SRM members on the National Academy of Science committee concerning status and progress.

Watershed/Riparian Task Group

1. Develop a list of people with expertise in the subject.
2. Develop an appropriate SRM publication on riparian/watershed management.
3. Put on the Watershed/Riparian symposium at the Reno 1990 annual meeting.
4. Develop the means and contacts to serve in review capacity for documents such as state water quality plans.

Wildlife/Wildlife Habitat Task Groups

1. Organize and conduct a symposium at the 1990 annual meeting on the topic "Can Livestock be Used as a Tool to Improve Wildlife Habitats?"
2. Develop plans and strategies to write a book on Rangeland /Wildlife.

Society for Range Management Annual Meeting Dates

Year	Dates	Location	Facilities
1990	February 12-16	Reno-Sparks, NV	John Ascuaga's Nugget
1991	January 19-24	Washington, D.C.	Crystal City Marriott
1992	February 8-13	Spokane, WA	Sheraton
1993	February 13-18	New Mexico	Doubletree Inn
1994	Not Established	Denver, CO	Not Established

Summer Meeting Dates

Year	Dates	Location	Facilities
1989	July 14-18	Kamloops, B.C.	Canadian Coast Inn
1990	July 29-Aug 1	Monterrey, Mexico	Not Established
1991	Not Established	North Platte, NE	Not Established

1989 Section Meeting Schedule

Section	Summer Meeting	Annual Meeting
Arizona	8/25-26 (*Tentative) Tentative: Eastern AZ	1/19-20 (*Tentative Casa Grande, AZ
California	6/27-29 Barstow	11/2-4 San Luis Obispo
Colorado	8/10-11 Craig, CO Colorado Springs	11/30-12/2 (Tentative) Red Lion Hotel
Idaho	6/22-23 Yellowstone Nat. Park	12/7-8 Pocatello, ID
Nebraska	6/17 Whitman, NE	10/12-13 Grand Island, NE
North Central	8/19 Shooting Star Memorial	9/8-9 Stevens Point, WI
Northern Great Plains	6/19 Bismark, ND 7/5-6 Prairie Potholes Chap. Battleford Prov. Park- No Battleford, Sask.	2/12-16 Reno, NV 9/22-23 North Dakota Chap. Minot, ND
Pacific Northwest	7/14-18 Kamloops, British Columbia	10/25-27 Lincoln City, OR
South Dakota	6/13 Marcus Comm. Hall Marcus, SD	10/12-13 Gill's Sun Inn, Rapid City, SD
Southern		12/1-2 Winrock Int'l., Morrilton, AR
Utah	6/1-2 Henry Mts.	12/7-8 Pocatello, ID
Wyoming	6/28-30 Diamond Guest Ranch, Chugwater, WY 6/11-17 Youth Range Camp, Tensleep, WY	12/7-8 Douglas, WY

Mini-directory, 1989

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Joint Meeting of the Board of Directors and the Advisory Council

Advisory Council Recommendations to the Board of Directors

Recommendation 1. The Advisory Council believes there is a need to better explain what rangelands are and the value of stewardship of these lands to the general public. The Advisory Council therefore recommends the Board of Directors consider assigning the Information and Education Committee the task of developing and distributing media spots to accomplish this goal. In addition, the Advisory Council feels that cooperative arrangements with other groups or organizations, sharing the same point of view, be explored to increase the effectiveness of this effort and reduce the cost of developing these media spots.

These media spots may also help enhance SRM's image.

Accepted, with the I & E Committee charged to develop an action plan to accomplish the goals of the recommendation and report to the Board at the 1989 Summer Meeting.

Recommendation 2. The Advisory Council recommends the Nebraska Section be accepted as the host of the 1991 Summer Meeting, the site being the Sand Hills of Nebraska (North Platte).

Accepted.

Recommendation 3. The Advisory Council recommends the Colorado Section be accepted as the host for the 1994 Annual Meeting.

Accepted.

Recommendation 4. The Advisory Council recommends the Board of Directors accept the Membership Committee recommendation whereby current regular SRM members would receive a $5.00 reduction in membership fees for each new **regular** member they solicit, up to $45.00. Current student members would receive the $5.00 discount for any type of member solicited.

Accepted with clarification that student solicitations will not be counted in the regular member reduction and students will receive the $5.00 discount for new solicitations up to the amount of a student membership.

Recommendation 5. The Advisory Council recommends the Board of Directors accept the Membership Committee recommendation to change the Emeritus membership category criteria to (1) retired, (2) 15 years of previous membership, (3) minimum age of 55, and (4) membership fee of $25.00 with Emeritus members receiving all SRM correspondence except the *Journal of Range Management.*

Accepted, with clarification (1) all candidates must qualify under all three categories listed, (2) fee will be 5/9 of the regular membership fee, and (3) the recommendation will be placed on the election ballot as a proposed change in Bylaws.

Recommendation 6. The Advisory Council supports the intent of Resolutions one and two, formulated by the Conservation Reserve Program Task Group and recommends the Board delegate the review and finalization of the Resolutions to the Public Affairs and/or other appropriate committees.

Accepted with action deferred until the report of the Public Affairs Committee. (See Conservation Reserve Program Task Group Resolution #2 [addressing wetlands] as accepted by the Board contained in this issue. Resolution #1 [addressing crop acreage bases] will be reviewed by the Public Affairs Committee with a recommendation expected at the 1989 Summer Meeting.)

Minutes Highlights

Meeting of the SRM Board of Directors February, 1989, Billings, Montana

The 1990 Annual Meeting schedule will vary from past years. The meeting will begin with the range tour being conducted on Monday, February 12. The schedule will follow with the Plenary Session on Tuesday morning, the General Membership Business Meeting on Wednesday afternoon, and the meeting will be brought to a close with a stand alone symposium on "Celebrating Range Management Successes" on Friday morning, the 16th.

1989 Summer Meeting dates are July 14-18 in Kamloops, British Columbia, Canada. The pre-registration fee of $85.00 US (on-site registration—$95.00 US) will include the Workshop, social hour, barbeque and two day tour.

The 1991 Annual Meeting in Washington, DC, will be held at the Crystal City Marriott on January 19-24 and will emphasize the use of the political and social processes needed for moving into the next century.

Two international meetings of interest to SRM members in 1989 are the Global Natural Resources Monitoring and Assessment—Preparing for the 21st Century Conference which will be held in Venice, Italy, September 24-30, and the XVI International Grasslands Congress, which will be held in Nice, France, October 4-11.

A proposal from the International Affairs Committee was accepted to foster range management in other countries by continuing to develop procedures for liaison activities with established range societies or with groups/individuals working to form societies or Sections. Five regions of the world outlined in the proposal for designation of SRM liaison representatives are Asia, Mid-East, Africa, Latin America, and Circumpolar.

The Complimentary *Rangelands* Incentive Program will be evaluated after the completion of the 1988-1989 year to determine if the program should be continued.

An updated version of *Rangeland Entomology* was accepted for publication with a suitable title or subtitle to be determined. The Publications Committee will continue working on Annual Meeting Abstract publication details.

The Board of Directors accepted the mission statement, intermittent goal, and objectives for the Excellence in Range Management Committee. The mission statement will be: to promote recognition and understanding of the values of healthy range ecosystems. The intermittent goal is: To promote cooperation between government, ranchers and other environmental groups.

The Conservation Reserve Program Task Group will continue its work to develop guidelines for more effective communications with SRM Sections, as well as developing a response to the Soil Conservation Service.

A review of the University of Wyoming's request for consideration of accreditation will be conducted by the Accreditation Panel during the year.

A Plan of Work by the Research Affairs Committee was accepted to include: trying to consolidate understanding of research programs in the Forest Service and Agriculture Research Service Five Year Plans; improve data for completing an improved survey on research; continue developing effective ways to analyze range research image in the U.S.; and, continue working on research funding and policy for SRM.

The Rangelands Reference Area Committee will be requesting SRM Sections to assist in developing an inventory and evaluation of all rangeland reference area exclosures.

The 1988 Membership Phone-A-Thon conducted by the National Capital Section results were positive and the Board approved the recommendation of the Membership Committee to conduct the project again in 1989. The Committee voted down the concept of "Associate" memberships and the SRM Bylaws do not currently provide for this type of membership. The 1989 membership goal is set at 5,050.

A recommendation of the Awards Committee to decrease the age requirement from 38-40 years of age to 35 years of age for the Outstanding Young Range Professional category was accepted.

The Task Group on Small Tract Range and Pasture Management with Emphasis on Horses requested the Board accept a minimum existence of the Task Group for three years with the following goals outlined: Year 1 - Emphasize management of acreage (5 acres or less) which is being used to support horses; Year 2—Emphasize the need of small acreages of 40+ acres which is being used for livestock other than horses; and, Year 3—Emphasize small acreage not being used for livestock at all. The Task Group will begin by developing management information on horses to be circulated to 4H, rodeo organizations, fairs, and horse associations in the immediate future.

The Professional Affairs, Student Affairs, Range Science Education Council, Employment Affairs and Excellence in Range Management Committees will continue working on the implementation procedures for getting information distributed to as many people as possible regarding the Range Apprenticeship Program. The Public Affairs Committee will review a proposed position statement on the Program.

The Professional Affairs Committee recommended the "Trail Boss" logo be retained as it represents a wonderful history, tradition, and diversity of meaning. It was suggested a caption or slogan could be added to the logo to capture the many values and multiple use concepts of

SRM. The Committee also suggested the name of the Society should be kept as it is with SRM working to change its internal affairs rather than its external affairs such as a name change. The "international" status of the Society should be de-emphasized without neglecting SRM's impact as a "mentor" for other world societies. The Board approved of this recommendation.

The National Range Conference Coordinating Task Group was disbanded as it completed a final report. The report will be sent to the USDA Range Issues Working Group and any tasks that are ongoing will be assigned to representative committees within SRM for continuation.

Public Affairs Committee completed the "Assessment of Range Condition and Trend of the United States in 1989" report which will be published as a Society report. This report will be considered a companion report to the revised "Glossary of Terms" and both will be considered first generation reports. The Information and Education Committee and Washington DC Representative will continue developing an effective strategy and reporting plan for this document to be brought to the Board at the 1989 Summer Meeting.

A Mason Scholarship will be administered by the Student Affairs Committee who will establish guidelines and criteria for the program by the 1989 Summer Meeting. Also, the concept of a Boy Scout Merit Badge for range management being presented to the Boy Scouts of America was accepted.

The Board of Directors accepted distribution of correspondence on the following issues at the recommendation of the Public Affairs Committee: Resource Planning Act Range Assessment; Texas Half-Shrub Resolution and Noxious Weed Legislation; Fire Policy Management Policy Statement; California Desert Protection Act; and, Natural Resources for 21st Century.

A recommendation was accepted that $500 of the interest funds from the Endowment Fund will be awarded annually (as a merit award) to certain members of the High School Youth Forum and the Student Conclave as requested by the Student Affairs Committee *when the Endowment Fund reaches a level of $100,000.*

The Board of Directors established specific policy on terms of membership for the Finance Committee and Endowment Fund Board of Governors.

The attendance at the 1989 Annual Meeting was recorded at 1,512.

Copies of the complete set of Society for Range Management Board of Directors Meeting Minutes can be obtained at a minimal fee by contacting the SRM office at 1839 York Street, Denver, CO 80206 or call (303)355-7070.

Policy Statement

Fire Management

Uncontrolled fire and civilization are generally not compatible; yet when properly used, fire creates little risk to life or property and can be an environmentally safe management tool. The Society for Range Management recognizes two kinds of fires: prescribed fires and wildfires. Prescribed fires may be ignited or naturally caused and permitted to burn within specified conditions to achieve established management objectives. Fires outside of prescription are wildfires and appropriate suppression actions should be taken, ranging from prompt control to confinement.

Research and practical experience have shown that prescribed burning can and should be used to manage many ecosystems. Some desirable effects of prescribed burning are the reduction of the potential for catastrophic wildfires, enhancement of wildlife habitat, forage improvement, ecological diversity, and enhancement of water quality and quantity. To exclude fire, either as a natural force or a management tool, means that we accept a highly unnatural ecological environment.

Accepted by the SRM Board of Directors on February 23, 1989.

REVISED POSITION STATEMENTS BY THE SOCIETY FOR RANGE MANAGEMENT

Accepted by the Board of Directors on February 23, 1989.

RECREATIONAL USE OF RANGELANDS

The Society for Range Management recognizes rangeland as a significant source of recreational opportunities. In addition, the economic returns generated by such activities have tangible and intangible beneficial effects on local economies.

The Society for Range Management supports the concept that development of recreational opportunities on rangeland should be considered provided that such use is compatible with other rangeland resource values.

INTEGRATED PEST MANAGEMENT

The Society for Range Management recognizes that management of rangeland ecosystems is necessary to achieve specific plant or animal pest objectives. This may include such measures as mechanical, chemical and biological treatment, including prescribed burning, or combinations of these.

The Society supports the concept that integrated pest management should be used as necessary and feasible. It also emphasizes the need for sound management following treatment to assure that the long-range objectives are met.

In response to Moritorium on Removal of Reference Area Exclosures

CRITERIA FOR EVALUATING
RANGELAND REFERENCE AREA EXCLOSURES

Maintain an exclosure if:

1. The exclosure is part of a network of rangeland reference areas and/or would create a void in the reference area system network if it was destroyed. Adequate representation of the protected ecosystem(s) in the reference area system should be assessed.

2. The exclosure still serves its original purpose, continuing to contribute to our knowledge of the protected ecosystem(s). The original objectives for establishment and maintenance are still viable and clearly discernable.

3. Ecosystem sampling records are available. Conversely, if records have been lost, but the exclosure has been maintained over time, then continue to maintain the exclosure. Establish new sampling. This is especially important it is the only representative of a particular rangeland ecosystem. Conduct careful ecological evaluation of the exclosure, and contact people knowledgeable about what occurred at the time of original establishment to reconstruct the history of the site as much as possible.

4. The integrity of the barrier has been maintained through the years or has not been destroyed long enough to render the exclosure useless as a comparison with adjacent ecosystems.

5. It is of sufficient size to meet original or current objectives for management, education or research.

6. The exclosure is on a location where it is possible to maintain a barrier. Conversely, if fence maintenance is difficult because of inaccessibility, frequent snow damage, etc. AND another reference area is available elsewhere on the same site, then removal may be justified. Criteria 1, 2 and 3 would take precedence however.

Accepted by the SRM Board of Directors on February 23, 1989

Moving?

Let us know as soon as possible to keep your publications coming. Send your new address to us at:

Society for Range Management
1839 York Street
Denver, CO 80206

or call:

(303) 355-7070

1989 Annual Meeting Advisory Council Abbreviated Minutes Rough Draft

The Advisory Council convened February 19-20, 1989, in Billings, Montana.

In review, all seven Advisory Council Recommendations presented to the Board of Directors for consideration at the 1988 Summer Meeting were accepted. The Public Affairs Committee continues to monitor activities regarding the Texas Half-Shrub Resolution and the proposed Annual Meeting Revolving Fund is under review by the Finance Committee.

Items of specific interest to Sections were:

The need for updated Section Officer and Newsletter Editor information was emphasized. Sections are being asked to provide the Denver office with the names and addresses of new officers and newsletter editors as soon as possible following their Annual Meetings in order to meet the necessary Minidirectory publication deadline, as well as facilitating use of this information by other Sections in a timely fashion.

Section Youth Activities and Student Affairs Committee Chairmen are invited to attend and participate in a day-long planning session being held Sunday, February 11, 1990 at the Annual Meeting in Reno. Hosted by the parent Student Affairs Committee, the purpose of the session is to define and prioritize ways to put SRM in a leadership role in youth education.

It was the feeling of the Advisory Council that the success of the *Rangelands* **Subscription Incentive Program** may rest in the areas of personal contact and follow-up with recipients at the Section level. As such, those Sections participating in the program are being asked to make these efforts priorities with this year's recipients. It was also suggested, Sections contact last year's recipients in an attempt to ascertain reasons they did not subscribe and possible ideas for making the program more effective.

The Advisory Council discussed the **tax exempt status of the individual Sections** of SRM. Due to the variation among Sections, it was agreed that each Section will need to determine what action is needed to obtain the following items:

Articles of Incorporation
State and Federal Tax ID Numbers
IRS Letter of Determination (recognizing the Section's tax exempt status)

It may be necessary to consult an accountant and/or refer to IRS Publication #557.

The Council also discussed changing the Society's name and logo. It was the general consensus that neither should be changed at this time.

Mr. Glen Secrist, of the National Capital Section, was elected Chairman-Elect of the Advisory Council.

Six recommendations were passed for presentation to the Board of Directors. (See Joint Meeting Minutes.)

Readers Write:

SRM's Image, Name, Logo

It is the perception by some that SRM has an image problem. A proposed solution which has been voiced is to change the name of the Society for Range Management and do away with the Trail Boss logo. I strongly disagree with both of these proposals. If we have an image problem let's work on improving our image. Changing our name and logo will do nothing toward an improved image.

The objectives of the Society for Range Management, as printed in every *Rangelands* and *Journal of Range Management*, are valid and succinctly spell out why the Society was organized. The study and promotion of proper management of our rangelands and all its resources, still remains our goal. Our task is to make this known to all concerned. If we were to change our name to the "Society for Natural Resource Management" (As suggested by John Bohning, "Viewpoint: SRM's Image, February, 1989, *Rangelands*), we would still have to define what this means. Changing the name would not change a thing, in fact it would confuse the matter.

A Society is an association of individuals for a common goal. Our goal is the promotion of sound range management. So it only stands to reason that we should be called the Society for Range Management. Adding to the name, as suggested in the "President's Notes" October 1989, *Rangelands*, has some merit. Adding North American to our title would not change the basic tenet that we are a Society for Range Management.

The Trail Boss was responsible to see that all ran efficiently and orderly. This seems an appropriate logo for the Society whose goal is the efficient, orderly management of our rangelands. Let's spend our efforts on improving our image, not on changing our name and logo, which in my opinion, is counterproductive.—**John N. Baker,** Golden, CO.

John Bohning's *Viewpoint* on the SRM image alluded strongly to the need for change in our society. He may not have gone far enough, however. The reality is that among junior members of the SRM, and potential student members, there has been discussion of looking elsewhere for a responsive natural resources organization, or forming an alternative. Does this shock members? I certainly hope so. It should shock them as much as another disturbing fact: a number of range science departments in universities are either being merged into other departments or are under consideration to do so.

Why the discontent among young members? Firstly, many junior or potential members feel that the profession is only *nominally* open to women and minorities, and that little real energy has been expended to broaden the profession. Women involved in the profession complain of being addressed paternalistically by other professionals, or having to move outside the profession to find more promising career opportunities.

Secondly, unlike other resource management and engineering professions, our profession appears to be most accessible to a specific American cultural group. No one should deny the contribution that has been made by the "2nd son" of the rancher to range management, and their special insight into range problems. Many of us grew up on family ranches, or worked on them in some capacity. Personally, I have benefited greatly from my own pre-university experiences as a ranch hand. However, modern scientific and technological treatment of grazinglands concerns itself with more than the art of raising cattle on western rangelands; our theories about plant-animal interactions, land degradation, land rehabilitation, and ruminant nutrition come from a wide variety of scientific sources. A strong profession can only be sustained by recruiting students from a diversity of academic and cultural backgrounds, and by training our own prospective professionals to contribute to the greater context of global natural resources management and engineering.

As a profession that is often concerned with humans and societal use of resources, we have generally failed to accommodate input from the social sciences. USAID-sponsored foreign projects regularly require studies of cultural strategies of pastoralism before intervention, yet case studies of American ranching families that describe the cultural, economic and social support systems are rare. Regional American pastoralism (the family ranch) should be studied intensively in an interdisciplinary context, represented rationally to academia and the American public, and aided in its struggle to survive.

In summary, our new priorities should be to: (1) attract innovative individuals into the profession from all backgrounds and provide them with incentives to remain; (2) engender the American public with a concern for the preservation of the family ranch and rangeland use; (3) preserve grazinglands and defend pastoral cultures worldwide. To meet this challenge, SRM must change and it must change quickly.—**Richard Cincotta,** Los Angeles, CA

Recently there has been much discussion (some of it already quite heated) about changing the Society's Logo. Reasons given range from sexism to racism to portrayal of a low image, with the main reasons seemingly centered around the point that the logo conveys a narrow minded, single use approach to resource management.

I would like to speak out strongly against changing the logo. Here's some of my reasons:

I'm an active registered member of the Association of BC Professional Foresters. Their logo is so nondescript I cannot even picture it in my mind let alone explain what it stands for. I cannot say that for the SRM logo: to me it conveys an image and an identity of concern and caring for the range resource.

The objectives of the Society as stated on the front page of the *Journal of Range Management* are range oriented and so they should be. The primary objective of a range manager is to ensure that ranges are properly managed. An important part of the range manager's role is to represent range interests at resource user meetings, in the development of resource management plans, envi-

ronmental impact statements, and to provide expèrt advice concerning range matters.

These functions do not preclude or even waive the responsibility of the range manager to consider other resource values. There are other professionals, i.e., foresters, hydrologists, park managers, wildlife biologists, planners, sociologists, pedologists, etc., who have areas of expertise; their professional responsibilities are to ensure that their resource specialties are likewise properly considered and protected.

The Range Manager's professional role is and should be centered around range management. A logo that conveys a different message would, in my opinion, do a disservice to the profession and integrity of the Professional Range Manager.

I have always been a bit of a romantic—have always wanted my own cattle ranch, and have always loved the outdoors. The SRM logo captures a lot of these sentiments for me.

My daughter recently bought a book entitled "Cowboy". The Preface to the book conveys the feeling and romanticism much better than I can. Two short quotes are included below:

> "It is a book about how America gave birth to the Cowboy, then observed him with astonishment, about how we have continually remade the cowboy, molding him to suit our needs, about why the complex figure of that horseback boy somehow endures on the frontier of interstellar space."
>
> "And perhaps it is even a book on whose pages you'll catch a glimpse of yourself as well, as a glimpse of some silk-shirted cowboy or cowgirl you once dreamed you might become.

The SRM logo offers me and in fact everyone the opportunity of that glimpse. Let's not lose it.—**Fred Marshall,** Midway, B.C.

Editor's Note: During the 1989 Annual Meeting of the Board of Directors, several SRM Committees discussed the possibility of changing the name of the Society. In particular, the Professional Affairs Committee recommended two specific items:

"The "Trail Boss" should be retained as the Society's logo, as it represents much more than what it appears and can mean many things to many people. It represents a wonderful history and tradition. It was suggested that the addition of a caption or slogan to the logo, attempting to capture the thoughts of the "Trail Boss" on rangelands and its many values, would help convey the multiple use concept of SRM.

The Society should work on emphasizing internal changes, rather than effect external changes such as a name change. The Committee feels SRM should keep its name as it is, de-emphasizing our "international" status without neglecting the fact that SRM is a "mentor" for other world societies."

The Board of Directors approved the report of the Professional Affairs Committee.

Executive Vice-President's Report

You have never lived until you have taken a walking tour of Washington, D.C., with our representative Ray Housley. During a recent visit to the nation's capital we spent four of the most productive days I have ever spent in behalf of our Society.

The schedule that was developed for us by Ray left few spare minutes to relax and none for sight-seeing. In fact on several occasions we simply had to strike out on foot to make the next appointment due to the overrun of the discussion during the previous meeting.

Now I don't mind walking—in fact, I enjoy it very much. But when you are with a long-legged totally dedicated person who is hell bent to be always on time, you have the distinct impression that your legs have been worn down at least two inches and I can't spare that much.

Some very important facts came to light on our trip that I want to share with everyone.

First, our program of celebrating success stories is at the very least a smash hit. Leave it to me to not recognize a sure winner. I thought it was a very nice idea and needed support, but never in my wildest dreams did I think it would receive such enthusiastic interest. Everywhere we went—from the true environmentalist to the hard-core conservation producer—they wanted to know more about it, how to become involved, and where could they obtain articles and video tapes to show their audiences. The bottom line is that everyone loves a winner, and we have lots of them. In my opinion we have barely scratched the surface on this one and the sky is the limit. It just may be the answer we have been looking for to counter all the bad publicity that keeps coming out on the condition of our renewable natural resources.

Perhaps the second most important point of this trip was the growing recognition of the importance of the rangelands of the U.S. and the world. Not once did I hear the tired old jokes about a cook stove. Today the leadership in Washington, D.C., have at least started to recognize our gentle giant the rangelands and are giving them due respect. I feel we have come a long way and now is the time to really hit the ball. I doubt that a better chance will ever come along in the foreseeable future.

This enthusiasm for the rangelands is not only expressed in Washington, D.C., but in many other locations. For example, I attended a very up-beat conference of U.S. Forest Service range people in New Mexico. Here everyone seemed to have a real bounce in their step and the future looked bright to them. Frankly, there is nothing

more discouraging than to be around people who are counting years, days and, yes, even the hours until they can retire. When you think about it, how in the world could any one produce in that atmosphere let alone enjoy their work? I for one am very glad that we are seeing change taking place and good professional pride coming to the forefront. Every single one of us will benefit from top to bottom.

Of late we are hearing a lot about LISA or Low Input Sustainable Agriculture. Recently I attended a conference representing SRM on the subject in Omaha, Nebraska. There was a good crowd and the discussion was lively. But what was lacking was the role of livestock. I feel that SRM should step forward and fill that large gap in a very good program. Sure, I fully understand the importance of good conservation farming methods, but the potential for the use of animal agriculture is unlimited, particularly in the realm of lean, low fat meat. The general public wants it, the rangelands can produce it, and everyone will benefit. I'd like to hear from our SRM members on their views of range fed beef, venison, lamb, and elk. Darn it, it's a natural and we don't seem to want to give it the priority it deserves.

Good news—the *Glossary* has finally gone to press and will soon be available for distribution. In addition, the price is right. We are able to sell them for $5 each. So you old charter members of the tighter than wallpaper club break loose and buy one. I'm going to. It's well worth the price. You need a copy in your professional work and the society needs your continuing financial support. Just remember only about 75% of our operating funds come from dues. The balance has to be generated from such arenas as book sales and contracts, so supporting these efforts gives benefit in more than one way.

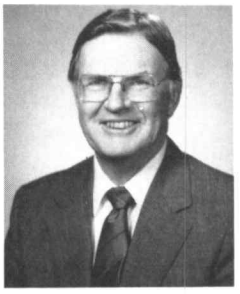
I have just been given the figures on our membership and it looks very promising. We are ahead of last year by 3% and with good effort from everyone we could easily be on the way toward a healthy increase. But I am perplexed by one thing: the renewals are down a little and numbers are up. It appears to me that we are slipping a little on follow up with slow renewals and concentrating on new members. We certainly need to keep up the good work but also take after renewals with the same enthusiasm.

I'm sure you are all aware that the National Capital Section will be doing the Phonathon again. This will certainly help with renewals, but we all need to give those people a lot of follow up support to make this great effort as successful as last year.

Believe it or not, time is fast approaching for the SRM summer meeting in Kamloops, British Columbia. I've been there and it is one of the more beautiful areas in North America. It will take a little extra planning to get there, so please read the related material on the meeting in your April *Rangelands*. It really won't be hard to get there but you need to be aware of the details of travel arrangements. The Denver office as always will be most happy to help as much as we are capable, so feel free to call with questions.

Final point, we had a super productive meeting in Billings. Let's keep up the momentum this summer. We have everything to gain and nothing to lose. Besides that, it will be a fun time in a beautiful setting—See you there.—**Peter V. Jackson,** Executive Vice-President, SRM.

President's Notes



Elsewhere in this issue you will find the 1989 emphasis objectives followed by objectives for the 38 SRM standing committees, task groups, boards, panels, and councils. **I encourage you to read through the objectives so that you may have a comprehensive idea of the scope as well as the depth of activities in which the Society is involved.** As you do that, I believe you will agree with me that SRM is, indeed, a broad-based action organization with a place for anyone interested in the resource and the profession. I am continually amazed at the intensity of activity shown by involved members. It is truly thrilling to realize the commitment people have to SRM.

Both Pete Jackson and I were part of an extremely well-organized visit to Washington, D.C., in the last week of April. Ray Housley, one of the two Washington, D.C., liaison representatives, organized the activities. Thank you, Ray, for a stimulating and, I believe, fruitful week. **The purpose of our visit was to make contact with a broad array** of professional and private organizations, and our own professional colleagues in the many agencies, and certainly not least of all, some Congressional representatives, and several people appointed by the Bush Administration to high positions of responsibility. As you who reside in or around Washington, D.C., know, the atmosphere is charged with the issues of the day and how these issues are or will be addressed. We have a very definite role to play on several levels.

First, as representatives of the profession, we can serve as a source of information and facts about the range resource. No one else does that. My impression was that Congressional staffers and appointees looked on us with respect because we can provide them with solid data. We present written and oral testimony on issues of importance such as funding for the range programs of various agencies, both operational and research. We have developed an excellent document showing research needs, the first one of which is in the range watershed area. As you know, water quality and quantity are of high national concern in the United States.

The National Capitol Section met for breakfast and Pete and I had the opportunity to share perspectives. Fee Busby also was in the Capitol and was the main breakfast speaker. Fee, as always, delivered much food for thought on the topic of image. Who we think we are will be what we

are. We must base that on the solid foundation of resource facts and what we know about them. The National Capitol Section has an active outreach program and I commend them on the level of their activity.

Earlier in April I was asked to participate on a panel at the Forest Service's National Range Workshop in Albuquerque. The overall focus on "change on the range" brought out many perspectives. The Forest Service, as does other agencies, faces the challenge of addressing several uses of the same basic resource. Successful accomplishment on rangelands will occur when all vegetation is in good ecological health. We need to be recognized for managing vegetation which provides for the benefits from rangelands. Managing vegetation calls for managing uses, one of the primary ones being grazing by domestic stock. The challenge lies not just in managing the grazing and the various other uses, but in having one's constituencies aware and appreciative of the worth of your management.

The new Task Group on Unity in Concepts and Terms met in late April in Tucson. Lamar Smith was asked by the group to provide leadership and coordination. The group got off to a good start on their five objectives, which you will find in the plan of work. There was consensus on what should be done and how they should go about doing it. Other committees are active on their charges, too. I talk with committee chairmen on a periodic basis; the annual and summer meetings are not the only times work gets accomplished. Much work takes place throughout the year. Believe me!

Several of you have expressed perspectives on the role of SRM in sponsoring conferences, workshops, short courses, and various other kinds of activities. We do not have a clear policy on this except that we try not to have monetary involvement unless the outcomes seem to be of high benefit. The Board will discuss this subject at the Kamloops summer meeting. Gary Donart is developing a draft policy so hopefully we can be more clear in the future.

Speaking of the summer meeting, I hope you are strongly considering coming to it. My own Pacific Northwest Section is host. Speaking from experience, our British Columbia colleagues put on tremendous meetings and tours! You will learn at lot and have a great time. The tour is two full days—Monday and Tuesday, July 17 and 18. A workshop will be held Sunday afternoon, July 16. For you who will be in Advisory Council and committee meetings, you will get to stay even longer since those activities start Saturday morning, July 15. I can guarantee a great activity—you don't even need to read my lips.—**Tom Bedell,** President, SRM

Frasier's Philosophy

Five years ago I took over the reins of *Rangelands*. Time has passed very quickly. I may be prejudiced, but *Rangelands* is the *one* item concerned with natural resource management that every SRM member glances at, looks at, or reads at least 6 times a year. This is a powerful tool for any organization. We must insure that this tool is used for insuring the proper management of our rangeland resources and not used for the self-serving purpose of any individual or group.

It has been my policy that everyone has a right to their thoughts and opinions. While I do not agree with all ideas, I do support the premise that everyone has the right for expressing their thoughts and beliefs. Within the guidelines of acceptable journalism standards and subject to review by the *Rangelands* Editorial Board, we will continue to publish ideas and information, pro and con, concerning various aspects of natural resource management. We must be forward thinking and not just a continuation or promotion of past ideas.

I have been leaving the last issue of *Rangelands* lying on my work desk and have noticed that almost all of my visitors find some reason to pick it up and look through at least the table of contents. We will continue to make *Rangelands* a publication that attracts that type of attention. Again, with my prejudices, *Rangelands* represents the image of the Society for Range Management. To many people not involved in Section or Society committee activities, it is their main tie to the Society. If we lose them as readers of *Rangelands,* then we have lost them from the Society. I do not intend to let this happen. I am very proud to be the Editor of *Rangelands* and will do my best to uphold the level of publication which everyone has come to expect.

Thought for the Day:

For every action, there is an equal and opposite criticism.

Harrison's Postulate
Murphy's Law, Book Two

RENO in 1990
The Quest for Excellence

The 1990 Reno Meeting Planning Committee has invited the Standing Committee on Range Excellence to convene a Symposium on:

EXCELLENCE IN THE MANAGEMENT OF RANGE ECOSYSTEMS

(a continuation of previous symposia on Celebrating Range Management Success)

The Marine Corps always advertise that they are looking for a FEW GOOD People. Well, this committee is looking for A FEW GOOD PRESENTATIONS.

IF YOU HAVE A STORY YOU WOULD LIKE TO TELL that:

—Demonstrates the value of healthy range ecosystems,
—Demonstrates the multiple values and uses of range resources,
—Demonstrates good range ecosystem management, and
—Demonstrates the celebration of good Range Management (telling the public our story);

that can be presented in a 20 minute, high quality VIDEO, you are invited to make your proposal.

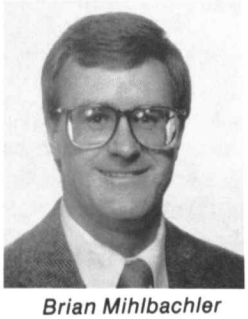
Initial proposals can be in the form of a brief narrative of the Range Success story; ie., what has been demonstrated and celebrated. From the initial proposals, the committee will select 4 to 6 for presentation and advise proponent to proceed with completion of the video.

Proposals should be made to: Randall R. Hall, 1990 Range Excellence Symposium Co-chairman, USDA Forest Service, 324 25th Street, Ogden, Utah 84401, (phone 801-625-5595), by June 15, 1989.

Results from the 1989 Graduate Student Papers Competition

Eighteen students participated in the Graduate Student Papers Competition during the 42nd Annual Meeting of the SRM at Billings last February. Six students competed in the Ph.D. category and twelve competed at the M.S. level. Each presentation was evaluated by a panel of three judges who were selected at random from a pool of fifteen judges. The final score for each student was determined by a summation of the three scoresheets (total points possible: 195). Competition was very keen and all students and their advisors are to be congratulated for their fine efforts. Refer to announcements in the *Call for Papers* and future notices in *Rangelands* for information on the 1990 contest at Reno.

Ph.D. Category



Brian Mihlbachler

1st Place (168 points)—Brian S. Mihlbachler—Texas A&M University. Brian was raised in Englewood, Colorado. He obtained his B.S. in Biology at Fort Lewis College, Durango, CO, and his M.S. in Range Management at the University of Wyoming.

Title of Paper: "Resistance and Resilience Stability within a Southern Mixed-Grass Prairie, Edwards Plateau, Texas" by Brian S. Mihlbachler, Fred E. Smeins, G.W. Thomas, and Charles A. Taylor.

Anne Spangler

2nd Place (167 points)—Anne M. Spangler—Texas A&M University. Anne was raised in Manhattan, Kansas. She received her B.S. and her M.S. in Range Management at Washington State University.

Title of Paper: "Extending the Results of Grazing Research With Simulation" by Anne B. Spangler and M.M. Kothmann

M.S. Category

Gary Holmstead

1st Place (175 points)—Gary L. Holmstead—Texas A&M University. Gary was raised in Littleton, Colorado. He received a B.S. in Range and Wildlife Resources from Brigham Young University. Gary's score was the highest of any participant's in the contest this year.

Title of Paper: "Comparative Water-Use, Water Relations: Performance of Three C4 Bunchgrasses in the South Texas Plains" by G.L. Holmstead, R.W. Knight, and M.A. Hussey.

Jake Weltzin

2nd Place (171 points)—Jake F. Weltzin—Texas A&M University. Jake was raised in Anchorage, Alaska. He received a B.S. in Range and Forest Management from Colorado State University.

Title of Paper: "Overstory-Understory Interaction in a Kenyan Savanna Ecosystem" by Jake F. Weltzin and Mike Coughenour.

Honorable Mention

Jennifer Atchley, Montana State University (M.S. - 168 points)
Richard Black, Texas A&M University (Ph.D. - 161 points)
R.C. Rowan, Utah State University, (M.S. - 156 points)

Antonio Narro Repeats Plant Contest Win

Ninety-six students representing nineteen colleges and universities participated in the 1989 Range Plant Identification Contest at the Annual Meeting in Billings. Contestants identified 100 plant mounts for a total possible score of 1,000 per individual or 3,000 per team.

Posting a win again this year was the **Universidad Autonoma Agraria "Antonio Narro"** scoring a total of 2,836 points. **South Dakota State University** placed second with 2,639 points. The third place team, **Montana State University,** scored 2,539 total points. **Texas Tech University** captured fourth place with 2,515 points and the **University of Alberta** placed fifth with 2,495 points.

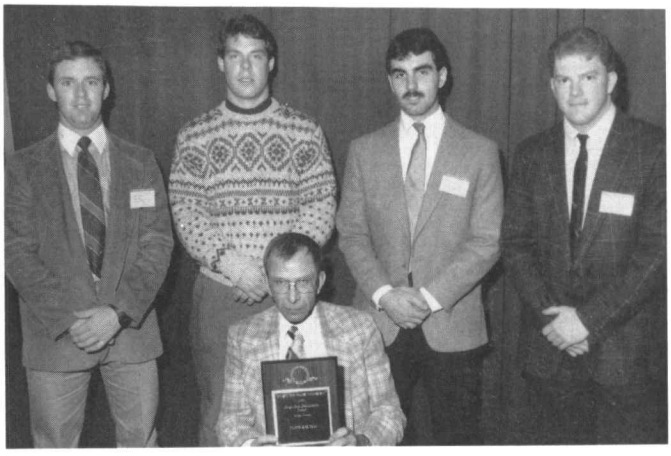
The high scoring individual in the contest was **Gelacio Huerta** from Antonio Narro. He was followed by **Chad King,** South Dakota State, **Hugo Angeles,** Antonio Narro, **Abel Lezama,** Antonio Narro, and **Jesus Flores,** Antonio Narro.

Newcomers to the competition were Chadron State College and Lincoln University. Coaches and participants are to be congratulated on an outstanding effort.—**Jennifer Pluhar**

Universidad Autonoma Agraria "Antonio Narro", *1st Place winners in the Plant Identification contest were: (l. to r. front row)* Eustaquis Mora, Abel Lezama, Maria T. Molina, *and* Gelasio Huerta; *(back row)* Hugo O. Angeles, Jesus H. Flores, Pedro Maya, Daniel Ibarra, *and Coach* Lucio Rodriguez

South Dakota State University, 2nd Place winner in the Plant Identification contest were: (l. to r.) Chad King, Misty Linabery, Shawn Wieshaar, Jack Isaacs, *and Coach Gary Larson.*

Montana State University, 3rd Place winners in the Plant Identification contest, were: (l. to r. front row) Carol Engle, Barb Steingruber, *and* Kim Mann; *(standing)* Lonnie Hinz, Toni Strauss, *and* Greg Millhullin. Carl Wambolt *was coach.*



Texas Tech, 4th Place winner in the Plant Identification Contest, were: (l. to r., standing) Philip Carter, Glen Morrow, Patrick Chubb, *and* Brian Murphy; *(seated) Coach* Russ Pettit. *Team member* Scott McDonald *was missing for the picture.*

University of Alberta, 5th Place winners in the Plant Identification Contest, were: (l. to r. front row) Bonnie Stelfox, Clara Qualizza, *and* Jodie Kekula; *(back row)* Rob Brown, *Coach* Barry Irving, Edward Bork, *and* Dave Vanderwell. *Missing for the photo is co-coach* Mike Willoughby.

1989 Undergraduate Range Management Exam Billings, Montana

The URME was held Monday morning with 80 students from 17 colleges and universities participating. The exam consisted of 122 multiple choice questions and three problems in the areas of Range Ecology, Grazing Management, Range Improvements, Range Regions, Range Inventory and Analysis, and Multiple Use Relationships. Students participated from: Arizona State University, Chadron State College (Nebraska), Colorado State University, Humboldt State University, Montana State University, New Mexico State University, North Dakota State University, Oregon State University, South Dakota State University, Texas A&M University, Texas Tech University, Treasure Valley Community College (Oregon), University of Alberta, University of Idaho, University of Nebraska, University of Wyoming, and Utah State University.

Colorado State University team included Coach Wayne Leininger, Rowdy Wood, Steve Hessek, Julie Calkum, and Travis Moseley.

The top teams were: (1) **Utah State University,** (2) **Colorado State University,** and (3) **University of Alberta.**

Congratulations to all who participated and to the winners.

1989 Combined URME and Plant Identification Winner

For the first time, a combined winner was announced. The winner had to place in the top 25% of each contest to be eligible. There were 4 contestants that demonstrated such knowledge this year. The winner received a special plaque from SRM and another award from the Soil Conservation Service. The SCS award included a plaque, a trip to Washington, D.C. to visit the national SCS office, and the chance to be the National SCS Range Conservationist for a day. The winner was **Edward Bork** from the University of Alberta. Congratulations!—**John Tanaka**

XVI International Grassland Congress October 2-12, '89 Nice, France

Robert Barnes, Executive Vice-President of the American Society of Agronomy, asked us to pass along this information on tour arrangements to the XVI International Grassland Congress in Nice, France.

Barnes has arranged a special tour rate through Burkhalter Travel Agency, Inc., 6501 Mineral Point Road, Madison, Wisconsin 53705, Phones: 608-833-6968, 800-362-5480 (Toll-free in WI), 800-556-9286 (Toll-free outside WI).

If you desire to take advantage of this tour with 9 nights in Nice, France, please make your reservations before July 15, 1989.

Please make all checks payable to Burkhalter Travel Agency, Inc. A deposit of $200 per person is required to secure reservations.

This tour price is based upon a minimum of 30 participants traveling together.

Itinerary

Monday, October 2:

Depart USA. Depart this afternoon on American Airlines for your flight to Paris. Relax in comfort while enjoying the attentive inflight service including meals and a movie.

Tuesday, October 3:

Paris-Nice. Upon arrival at Paris Orly Airport, you will connect to an Air Inter flight to Nice, on the French Riviera. When you arrive in Nice, you will be met and assisted by your French tour operator. Board your waiting motor-coach to transfer to the first-class Hotel Sofitel Splendid in Nice. You may register and pick up your Congress materials for the XVI International Grassland Congress this afternoon until 7:00 p.m. at:

Palais des Arts et des Congres
Acropolis
1, Esplanade Kennedy
Nice, France

Overnight at the Hotel Sofitel Splendid.

Wednesday, October 4 through Wednesday, October 11:

NICE. Continental breakfast is included daily at your hotel. Plenary Papers, Specialist Sections, Posters, Farmers' Forum Workshops and Mid-Congress Tours will be occurring primarily between the hours of 8:00 a.m. and 6:00 p.m. throughout these dates. All information pertaining to these events and the XVI International Grassland Congress, including fees, must be obtained through:

Secretariat of the
XVI International Grassland Congress
INRA-AFPF
Route de St.-Cyr, 7800 Versailles—France
Telex: INRAVER 695269F
Telephone: (33)(1)30 83 33 86

Thursday, October 12:

NICE-PARIS-Return to USA. After continental breakfast, your motor-coach will transfer you to the Nice Airport for your flight to Paris, where you will connect to your return American Airlines flight back to the states. In-flight meals will be served and a movie shown as you jet across the Atlantic.

Inclusions

- Roundtrip coach class airfare on American Airlines and Air Inter.
- Overnight accommodations for 9 nights at the first-class Hotel Sofitel Splendid in Nice, based on double occupancy, with a private bath/shower.
- Roundtrip transfers from the Nice Airport to the Hotel Sofitel Splendid.
- Porterage of luggage at the Nice Airport and the Hotel Sofitel Splendid.
- Continental breakfast daily.
- Taxes and service charges on inclusions.
- U.S. Departure Tax.

Pricing

Prices listed are per person, double occupancy

From **New York**	$1408
From **Washington, D.C.**	$1499
From **Madison, WI**	$1554
From **Chicago or Dallas**	$1591
From **St. Louis**	$1610
From **Denver**	**$1656**

Supplement for single room occupancy ----$335

IMPORTANT If you wish to travel on different dates or to/from different airports in the U.S. and abroad than those listed in this brochure, the travel agent would be pleased to assist you with your flight arrangements.

Also, if you plan to attend the Venice Conference on *"Global Natural Resource Monitoring and Assessments: Preparing for the 21st Century"* from September 24-30, 1989 the agent would be pleased to assist you with your flight arrangements. For information about the actual Venice conference itself, please contact Mr. Gyde Lund at 202/475-3747.