Experience is gained with every burn which contributes to increased safety and effectiveness of burns. Much of the ground that was lost during the era of fire control and that of low intensity incendiary burning may never be restored. However, fire that once renewed and nourished our native grasslands prior to European settlement has once again taken its rightful place in the management of Missouri's natural resources.

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Cooperation and Commitment for Improved Relations and Range Conditions

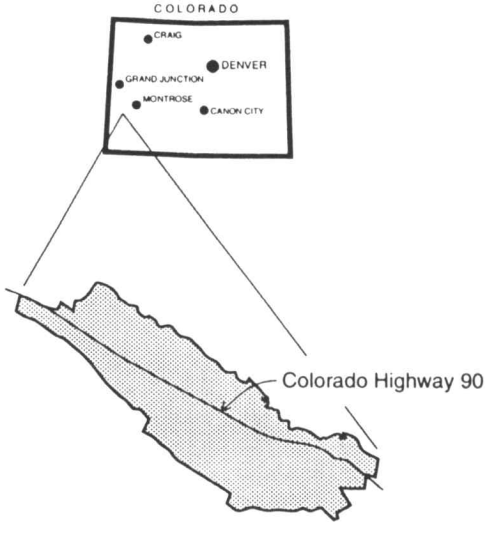
James Sazama

Grazing allotments on public lands administered by the Bureau of Land Management (BLM) range from greasewood flats to alpine tundra. When an allotment management plan (AMP) is prepared for an allotment, one problem usually identified is poor livestock distribution. There are many causes for this problem and vary with each allotment. The most common causes are:

- lack of water in an area which precludes livestock use;
- a seeding project that draws livestock to high quality nutritional forage;
- rough country and steep slopes which are grazed last, if at all; and
- a riparian area attracting livestock, like a magnet, to food, water, and shade.

One thing that can often interfere with solving livestock distribution problems is a lack of commitment by ranchers and BLM range conservationists to take action. This commitment has to be accompanied by excellent communication between the two parties or else the problem is not solved and often gets worse. Without open communication and a "win/win" attitude, it can be very difficult to solve distribution or other problems on public lands.

In the Uncompahgre Basin Resource Area of BLM's Montrose District in southwest Colorado (Figure 1), there is an example of what communication and a "win/win" attitude did to solve a distribution problem on the East Paradox Allotment. Local BLM range managers felt that by using a cooperative approach, any grazing-related problem could be successfully overcome.



The East Paradox Allotment includes 16,250 acres of public land and about 2,600 acres of private land (Photograph 1). The climate of the area is semi-arid with hot summers and relatively mild winters. The most dependable precipitation occurs during the summer period, and brief high intensity thunderstorms are common. Plant greenup generally begins in March for native cool-season grasses. Vegetation consists of sagebrush, fourwing saltbush, galleta grass, cheatgrass, needle grass, and sand dropseed. About 500 acres of sagebrush were plowed in 1944 and another 350 acres plowed in 1984. Wheat-

Author is with the USDI-BLM, Montrose District, Montrose, Colorado.

General view of Paradox Valley. Photo by D. Kauffman.

grasses were the predominate species seeded on these rangeland projects. Watershed condition throughout the allotment is classified as poor to fair, and a key objective of BLM management is to reduce soil erosion.

The allotment is used as a winter grazing area from January through February before livestock are moved to adjacent private land to begin calving. During the winter grazing period, high protein cottonseed meal and corn are fed as a supplement to pregnant cows. The southern exposures, low elevations, and good road access make it an ideal winter livestock operation.

Problems

The East Paradox Common Allotment has a history of problems, with the lack of good communication and trust between BLM and livestock permittees topping the list. In 1936, there were 25 permittees in the allotment; today five operators remain. In 1958, to stop a deteriorating range trend, BLM ordered a 58 percent reduction in grazing use, which was bitterly opposed by the permittees. This was followed by the elimination of spring livestock use in 1966.

Other historic problems on the allotment include:

- lack of communication between involved parties;
- lack of dependable water;
- no grazing system;
- large acreages of cheatgrass with remnant native grass and shrub plants intermingled;
- poor distributing of livestock resulting in over/under use of forage;
- expanding prairie dog towns;
- soil erosion caused by overland flows resulting in major gullies; and
- increasing winter big game use in direct competition with livestock for available forage.

How these problems were interrelated could be debated forever; certainly much previous discussion focused on why problems existed. One thing was clear, however: there was little communication between BLM and the permittees about how to solve these problems. This resulted in gridlock as far as resource management was concerned, with very slow progress toward improving range conditions.

The one problem that appears to have brought BLM and the permittees together was the rapidly increasing winter elk population on the allotment. The winter elk population in the late 1970s was near zero. By the mid 1980s, elk population was estimated at 300 head in the Paradox Valley. This rapid increase in elk numbers, in addition to poor livestock distribution, was leading to unacceptably high levels of use on the rangeland seeding areas and fourwing saltbush. Although not abundant, fourwing saltbush is a highly palatable, nutritious shrub species used by livestock and big game.

It was feared that another reduction in livestock use was forthcoming if something was not done to change utilization patterns and reduce the sustained grazing pressure on the seeded areas and fourwing saltbush.

Techniques

The first step to solving these problems was to reestablish communication among those with affected interests. That involved getting BLM, the five permittees, and the Colorado Division of Wildlife (DOW) together. Many meetings took place, with the most effective being field meetings, held on the allotment looking at specific conditions and problems. From these meetings came the first visible signs of a developing commitment to solve some of the problems on the allotment.

Once this commitment was in place, ideas on how management might be accomplished flowed freely. The ideas centered on how to reduce use on the seeded areas and fourwing saltbush, provide feed for a growing elk herd, and maintain or restore grazing capacity.

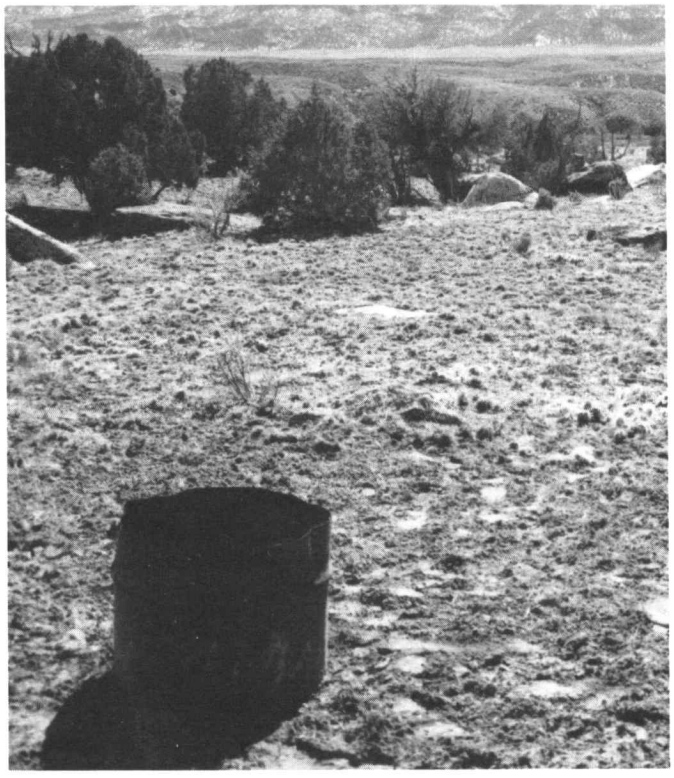
The first objective was to impress on the livestock users the need to closely watch utilization levels on certain areas and plants. The aim was to move livestock to ungrazed areas when utilization reached a low-moderate level. After two years of intense monitoring, which included utilization studies, maps, and aerial reconnaissance, BLM resource specialists and permittees got a much better idea of livestock and elk distribution patterns and forage utilization levels. Based on the monitoring information, BLM specialists developed a strategy that was built on permittee cooperation. A key part of this strategy was that permittees learned how to judge use levels and range conditions in such a way that there was no need to wait for BLM to tell them when it was time to move livestock.

Because the goal was to use ungrazed native ranges, normal cattle behavioral patterns, which were to repeatedly graze the easy-to-reach areas, had to be overcome. This required that livestock be gathered and herded every other day.

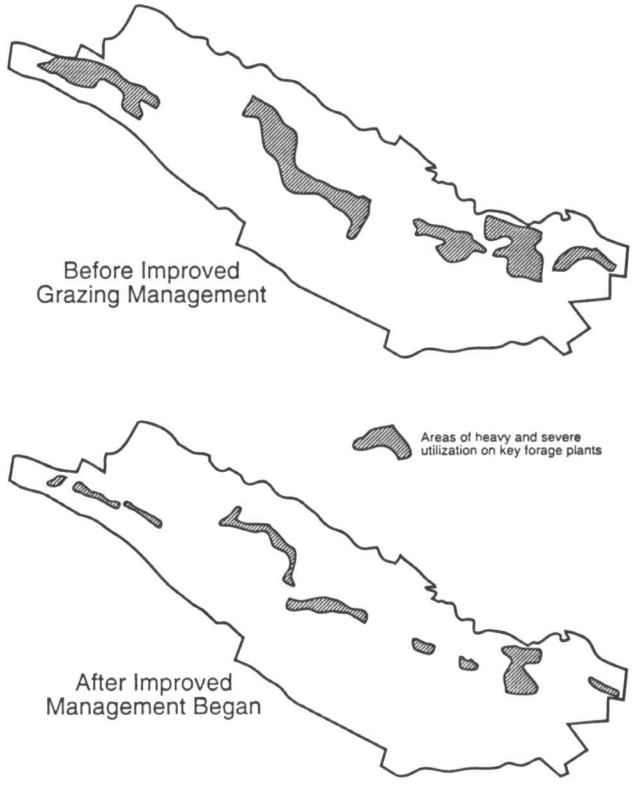
To further accomplish the objective of achieving more uniform distribution, another idea was to use supplemental feed to attract the animals to areas on the allotment that had historically received slight or no use. The supplemental feed consisted of cottonseed meal, corn, and salt fed in 10–15 barrels each holding 240 pounds of supplement (Photograph 2). BLM authorized this feeding program, which required permittees to absorb the cost of the program and responsibility for feed placement. Feed barrels were moved every one to three days during the two month grazing period, which means that permittees attracted livestock to 300–400 different locations on the allotment over the season. Permittees worked closely with BLM range specialists and it was common to see BLM personnel on the allotment hunkered over a map in the early morning cold discussing results and planned livestock moves for the day. During years when there was little snow, plans called for water to be hauled to the allotment in an 8,000 gallon tank.

Results

1. Grazing use patterns changed dramatically; the extent of heavy and severe use areas declined in the allotment, while slight or previously unused areas received increase use (Figure 2); the result was more even distribution patterns. Places never before grazed were not being used.



Supplemental feed barrel. Photo by D. Kauffman.



EAST PARADOX ALLOTMENT

2. Cattle diets changed, more sagebrush and dry cured native grasses were consumed as a result of supplementation. During normal winter, cheatgrass and introduced wheatgrasses remain green and palatable throughout most of the winter. As a consequence, these areas were more nutritionally attractive than surrounding native ranges. Feed supplements provided a critical missing ingredient, thus making more uniform utilization possible.

3. Utilization on fourwing saltbush declined from an average of 85 percent of current annual growth in 1986 to an average of between 20–30 percent in 1988 (Photograph 3).

Use on fourwing saltbush. Photo by D. Kauffman.

4. Elk use of the area has varied, largely because of snowfall, but continues to show an upward trend in numbers, even through three years of severe drought. The population in the valley has gone from near zero in 1980 to 500 in 1990. Good communication and cooperation with the DOW has resulted in special damage hunts and adjustments in the hunting season. This was to increase the elk harvest in this portion of the game management unit and to keep the animals dispersed during the early winter period.

5. Grazing preference was permanently increased by 20 percent in 1989, even though the allotment experienced a severe drought. This was the result of studies showing moderate use levels and better distribution.

6. Livestock production and performance improved in four ways:

a. Weaning of calves increased by 5–10 percent, especially for those cattle brought onto the allotment in the poorest condition.
b. The conception rate of the herd improved from 85 percent to 95 percent as the nutrition level improved from supplement feeding.
c. There were 5–8 percent more live calves one month after calving as cows were stronger and took better care of calves.
d. A death loss of one percent of the herd, while on the allotment, was almost entirely eliminated.

Discussion and Conclusion

Where do we go from here? Recent discussions have produced many ideas. The most promising include: using more barrels of supplement to increase the animal impact on the allotment, broadcasting seed around the supplement barrels to introduce a variety of forage species, and consolidating all of the animals into a single large herd, rather than many small herds. The latter idea would reduce the workload involved with moving the supplement barrels and herding every day.

The use of supplemental feed to attract livestock away from concentration areas is not new and has probably worked in other areas. It worked here for a couple of reasons. A problem was identified and communicated to those best able to solve it. All of those individuals affected by the problem were involved and committed to solving it in an atmosphere of trust. Because of the trust, there was a willingness to try something new and even bear an additional cost. This willingness helped to attain a wide variety of resource management goals—a "win/win" situation which is resulting in improved conditions and better relations.