Successful Range Management in the McCoy Gulch Riparian Demonstration Area

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Introduction

The McCoy Gulch Riparian Demonstration Area is located in the Royal Gorge Resource Area of the Cañon City District of the Bureau of Land Management (BLM), and demonstrates effective use of livestock to manage a riparian area. The area was originally fenced in 1986 to protect the woody riparian vegetation from livestock grazing. The demonstration area that is fenced is approximately 5 acres, and is part of an allotment of 320 acres.

McCoy Gulch is classified as a third order perennial tributary to the Arkansas River. It is a spring-fed sandy wash with headwaters in the foothills of the Sangre de Cristo Range. High intensity summer thunderstorms occur along its length in mid and late summer. Spring flooding due to snow melt is uncommon because of the geology higher in the watershed. The coarse soil texture results in infiltration into the ground and less runoff of spring snowmelt.

Climate in the area is semiarid with hot summers and mild winters, with the most dependable precipitation occurring during the summer period. Springtime is generally dry with grass green-up occurring in April. Vegetation of the upland areas of the allotment is a pinyon/juniper-dominated woodland with interspersed open blue grama parks. Approximately one-half mile of riparian habitat exists on the allotment. Vegetation of the riparian area is dominated by willows, bluegrass, tufted hairgrass, and some cottonwood and salt cedar. Watershed condition throughout the allotment is classified as poor to fair.

The allotment is used as a livestock calving area in January and February and cattle stay on the allotment until the last part of April or the first part of May. High protein content alfalfa and cake are fed as protein supplement to the pregnant or lactating cows. The rolling topography, available water, and good county road access make it an ideal calving area.

Problems

Woody riparian vegetation was almost nonexistent in 1984 because of unregulated winter use in the willow areas. Upland range condition was classified as poor to fair despite a winter season grazing use period and moderate levels of utilization on grass. Most of the riparian area was dominated by weeds and bare ground. It looked like a sandy wash and was not even considered a riparian area. In 1984, the grazing season was changed from winter to spring at the request of the permittee. At this time, the cattle use shifted from willows to grass, resulting in an increase in willows.

Techniques

Even though willows were increasing, the riparian area was fenced, and use on the willows has since been regulated. Willow utilization limits are keyed to the younger willow stem once before returning to browse any of them a second time. Approximately four to five inches of the leaders are removed in each pass (Photograph 1). The objective is to have each leader browsed just once. Light browsing stimulates branching of the leaders similar to a pruning. The utilization objective for western wheatgrass, Indian ricegrass, and blue grama is 80%.

Protein supplement feeding is required on upland areas where grass is sparse. The supplement is fed on areas where banks are steep, annuals are dense, and on sandbars or bare ground where vegetation is having trouble getting established (Photograph 2). The idea in the demonstration area is to use animal impact to advance plant succession from the early seral stage to at least mid-seral stage, and to help reduce bare ground.

Cattle numbers vary from year to year as does duration of grazing. When the utilization objective inside the riparian pasture is met, cattle are removed, irrespective of the number of cattle involved. Also, since the riparian use is during the dormant season, duration of grazing use is not as important as it would be during the growing season, when damage to plants is most likely to occur.

Leaving a high stubble height of grass in the riparian area is not an important factor because the area is not subject to spring flooding. By the
time floods are likely to occur from the summer thunderstorms, cattle have been gone for a sufficient time that the new growth will trap sediment and hold the sandy bottoms in place with a healthy root system.

Results

The riparian habitat of McCoy Gulch has improved dramatically. What was once a sandy wash with bare ground and weeds is now dominated by willows and a few cottonwoods (Photographs 3a, 3b, 4a and 4b). On the upland areas, where trampling and manure were evident, the vigor of blue grama and sand dropseed has greatly improved. In the sandbars along the riparian area, cheatgrass is being replaced by a high number of sand dropseed seedlings.

A quadrat frequency trend study was used to determine changes in ground cover, canopy cover, basal cover of live vegetation, and species composition in the upland portion of the demonstration area. Baseline data was collected in 1987 and resampled in 1989.

Results after two years were as follows:
- Bare ground increased by 9%
- Litter decreased by 10%
- Basal cover of live vegetation increased by 1%
- Canopy cover increased by 6%
Significant changes in species frequency were:

- Cheatgrass down 98%
- Sand dropseed down 32%
- Perennial forbs up 72%
- Frequencies of blue grama, red threeawn, Indian ricegrass, western wheatgrass and annual forbs were not significantly changed

Utilization was estimated using key species of western wheatgrass, Indian ricegrass, and blue grama. Percent use by weight was estimated rather than clipping and weighing. The estimated utilization for 1987 was 62% and for 1989 was 80%.

**Conclusions**

This study has shown that woody riparian vegetation can improve with livestock grazing, even with heavy use on grass species, as long as the use on the willows is regulated. Animal impacts appear to have improved the vigor of existing perennial grasses and forbs. Bare ground increased in the study area by about the same amount that litter decreased. This is probably due to factors such as the higher stocking rate in 1989, lower production of annuals in 1989, and unauthorized removal of manure from the study site by a local man for use as fertilizer.

The allotment was recently divided into three pastures with the two pastures outside of the demonstration area each containing riparian reaches. The management strategies will expand to these pastures to use livestock to manage riparian and uplands together.

The McCoy Gulch Allotment permittee, Rusty Ross, has been very cooperative with BLM in the shift of management strategy. It has added flexibility to his operation, resulted in an increase in the Animal Unit Months available, reduced health problems with cows and calves, and provided fresher forage (due to higher utilization levels). His creativity, suggestions, and observations are an asset to management in the uplands as well as the riparian pasture.

The McCoy Gulch Allotment is similar in vegetation and topography to much of the Royal Gorge Resource Area. The riparian improvement techniques that are developed in this study will be applied in areas of the Resource Area that have riparian and similar upland conditions. Allotment management plan revisions will be prioritized according to potential for riparian improvement as well as cost benefit analysis.