

Keeping Small Horse Pastures Productive

Everett M. Stiger

I purchased 40 acres near Wolf Creek, Montana for horse pasture in 1983. This was part of a large ranch that had been subdivided to pay off debts when the owner got caught in the cattle price squeeze in the seventies. The original ranch had not been seriously overgrazed, but was the victim of hard use during those tough times. My first measurement of forage production indicated about 1,000 lbs./ac. on that portion of the pasture invaded heavily by sagebrush. My first priority was to fence the pasture into two 20-acre units and then make plans to prescribe burn the sagebrush. Since I had six horses to pasture, I obviously couldn't prescribe burn the entire 40 acres at one time. Plans were made to burn the north half first.

Since I was a member of the local Volunteer Fire Department, I enlisted the Department's help as a training exercise, drafted a training and burn plan, and set out to prescribe burn the north half during the fall of 1987 (having no indication at that time of the terrible drought looming on the horizon during the winter and summer of 1988!). The ignition sequence was pretty simple, using roads and blackline¹ to hold the fire. Extreme caution had to be exercised and a well-thought-out burn plan followed closely, since year-round residences surrounded the pasture. Our neighbor to the north allowed us to use their access road as one boundary. Another neighbor let us use his stock pond as a water source.



Main ignition

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Editor's Note: A good example of what can be done on small acreages with a little effort.

Blackline: Prescribed fire containment that uses a strip of land where all fuel has been removed by burning. The width of the strip depends upon the expected flame lengths.



Igniting the first buffer strip



Securing the buffer strip and blackline



Near Plot #1, primarily bluebunch wheatgrass and Junegrass pre-burn. Fall 1987—960 lbs./ac.

An Incident Command System was set up with a Safety Officer assigned to assure that safety was always the first consideration during the burn. The prescribed burn went off like clockwork and the Fire Department members received superb training under a real fire situation.

To determine just how much improvement I would get from burning the sagebrush, I established several plots across the unit: Plot #1 in the heavy sagebrush, Plot #2 in a portion of the native pasture without sagebrush, and Plot #3 in a portion of the unit that had been planted to smooth brome and crested wheat by a previous owner.



Immediately post-burn, Fall 1987.

Plot #1 Production

Pre-burn 1987	960 lbs./Ac.
Fall 1989	2,178 lbs./Ac.
Fall 1991	2,613 lbs./Ac.

Two years after the prescribed burn, Plot #2 had essentially no change in production, however, Plot #3 in the smooth brome went from 1,920 lbs./ac. pre-burn in 1987 to 2,450 lbs./ac. in 1989. Production was measured by clipping all forage within a one-foot square on plots protected by a simple sheep-wire cage. The clipped forage



*Near Plot #1
June 1988, first spring after burn.*



*Plot #1—fall of 1989
2,178 lbs./ac.*



May 1990
With sagebrush removed, increased production is over entire area.



Near Plot #1, Fall 1991
2,613 lbs./ac.

was air dried in paper sacks until no further weight loss could be detected by weighing on a gram scale. Pretty simple, and basic, but effective.

The south half of the pasture was prescribe burned in the spring of 1990 with essentially the same results. The increase in production was so spectacular that neighbors on two sides of my pasture also prescribe burned their pastures as well. Each unit was rested one growing season after being burned.

To assure that the range improvement will be maintained, I developed a three-unit deferred rotation, using my two units (north and south halves), plus a third unit of 20 acres I rent from my neighbor to the west who is not using it at the present time. I use the three units with six horses from April 1st through the opening of hunting season in late October.

Grazing Schedule

North Half	South Half	Rented
April-May	June-July	August-October
June-July	August-October	April-May
August-October	April-May	June-July

From opening day of hunting season through March 31 of each year, I feed the horses hay while the pasture rests, usually under a blanket of snow.