

Coordinated Management of Elk and Cattle, A Perspective— Wall Creek Wildlife Management Area

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During the 1980's, a coordinated management program was developed for the Wall Creek Wildlife Management Area (WMA) in an effort to improve overall management of the area and resolve conflicts between elk and agricultural use of lands adjacent to the WMA. Emphasis was placed on improved management of public lands to encourage elk use through improved palatability and availability of winter forage for elk. This program was developed as a coordinated effort between the Montana Department of Fish, Wildlife and Parks (FWP), Beaverhead National Forest and the Wall Creek Stock Association with the following objectives:

- * allow for maintenance and enhancement of the soil and vegetative resource.
- * maintain high quality forage for wintering elk throughout the entire elk winter range.
- * reduce elk/cattle competition on critical elk winter range.
- * enhance the desirability of the entire Wall Creek WMA to alleviate game damage problems on adjacent private lands.

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* manage the entire elk winter range in a coordinated fashion regardless of ownership.

* provide for spring, summer and fall cattle use.

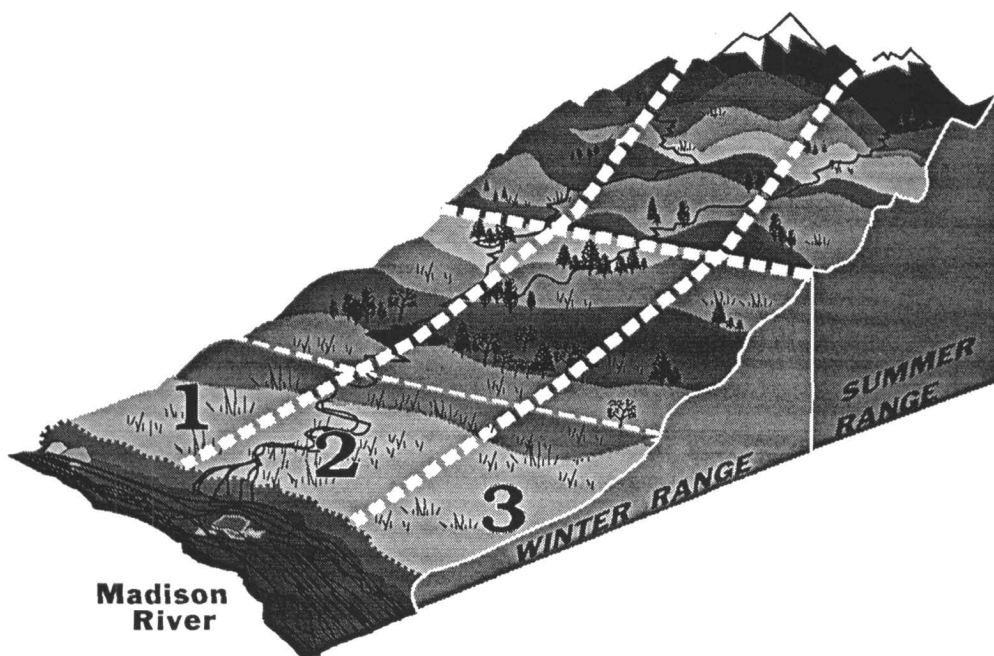
Description of the Wall Creek Wildlife Management Area

The Montana Department of FWP acquired the Wall Creek WMA in 1960 primarily for elk winter range. The purchase included 7,067 acres, of which 918 acres are State School Trust leased lands.

The Wall Creek WMA is located 26 miles south of Ennis, in the Madison Valley of southwestern Montana. Precipitation averages 12 to 14 inches annually. Plant communities are dominated by bluebunch wheatgrass and Idaho fescue. Slopes are generally blown free of snow during the winter period.

History of Elk Populations

Interviews with local ranchers indicated that only a handful of elk, 5–6, were present on the Wall Creek area in 1935. One of the earlier owners of this property reported in the early 1940's that about 30 elk wintered on the Beaverhead National Forest lands adjacent to his place. During one of the first population counts conducted by FWP, the winter of 1942–43, 56 elk were observed in the Wall



Schematic of the Wall Creek Grazing System.

Creek area. By 1950, damage to agricultural crops by deer and elk was reported.

At the time of FWP purchase, wintering elk had increased to 273; by 1970, the population had expanded to around 600 wintering elk. Since 1987, the herd has stabilized around 1,200 to 1,400 elk.

Historical Grazing

During private ownership prior to 1960, the Wall Creek area was grazed intensively by cattle. The grazing program could best be characterized as continuous, year-round grazing.

Immediately following FWP purchase, all livestock were removed from the Wall Creek WMA. Adjacent Bureau of Land Management lands along the Madison River were also withdrawn from livestock grazing and dedicated for recreational purposes. In 1961, the Beaverhead National Forest withdrew 311 head of cattle, previously associated with the Wall Creek base property, from the Wall Creek Grazing Allotment adjacent to the WMA.

In 1967, the Beaverhead National Forest implemented a six pasture grazing system which applied some of the rest-rotation grazing principles described in Hormay (1970). The lower two pastures, encompassing important elk winter range adjacent to the WMA, were grazed only during alternating years. However, during many years early fall storms would force cattle down out of the high elevation pastures and back into the lower two pastures (Schott 1989). The grazing season for the Wall Creek Allotment ran from June 16 to October 15.

From 1960 until the summer of 1982, a period of 21 years, the Wall Creek WMA was rested from all livestock grazing. During this period of no cattle grazing, frequent game damage complaints were received from private landowners adjacent to the WMA. A full-time manager was at that time stationed at Wall Creek and one of his primary winter duties was to haze elk back onto the WMA from private lands to the south. In addition, FWP fertilized both cultivated and native range lands, cut existing hay meadows so as to remove the residual vegetation to increase desirability by elk during spring and, in short, tried *nearly* all economically feasible means to lure wintering elk off adjacent private land lying to the south.

To address game damage and in an effort to more responsibly manage the entire elk winter range, FWP experimentally grazed cattle on the Wall Creek WMA for approximately three weeks during the summer of 1982. The initial experimentation was done in cooperation with the Beaverhead National Forest and followed rest-rotation grazing principles described by Hormay (1970). No grazing occurred in 1983. During the four-year period from 1984 through 1987, adjustments were made to the system. By 1988, the system was fully implemented and strictly applied the principles of rest-rotation grazing (Hormay 1970).

Current Grazing Program

The current system consists of 10 pastures, all of which

are periodically grazed by cattle. In a coordinated program, four FWP pastures and two National Forest pastures provide winter habitat for elk. The remaining four pastures are administered by the Forest Service and provide summer range for elk.

These pastures are arranged along an elevational gradient ranging from 5,600 feet to 9,000 feet (Figure 1). The three low elevation and three mid-elevation pastures provide winter elk forage. The four high elevation pastures are summer habitat for elk.

To make the system work properly, a considerable amount of interior fencing had to be constructed on the Wall Creek WMA. Most of the exterior boundary fences were and still are barbed wire, but all the interior fencing is three strand electrical fence which is dropped during the winter period to facilitate elk movement within the WMA. Pastures vary somewhat in size; however, they are balanced in cattle-grazing capacity.

The Wall Creek Stock Association consists of seven members who graze approximately 700 head of livestock through this system from May 1 through September 30.

In any *given year*, one set of 3 pastures is grazed by moving cattle up in elevation during the growing period, one set is grazed by moving cattle down in elevation during the post-seed ripe period, and the third set is rested. Over a *three-year period*, a given set of three pastures will be grazed during the growing season in year one, grazed post-seed ripe in year two, and totally rested in year three.



May 1, on day cattle are moved onto pasture. The first three photos are from the same photo plot, 1990, in low elevation winter range pasture receiving the early use, prior to boot stage treatment.

Under this system, following a grazing treatment during the growing season, two years of vegetative rest are provided with one of these being a year of total rest from livestock use.

Each year, cattle first enter one of the low elevation elk winter range pastures on May 1, where they remain for one month. On June 1, which corresponds to the period of rapid plant growth (boot stage), they are moved to the mid-elevation elk winter range pasture where they spend six weeks. On July 15, they are moved to a high elevation pasture until seed ripe. Following seed ripe, mid-August,



June 1, the day after cattle leave the pasture.



September 21, well after seed ripe in this pasture, i.e., showing re-growth following the early use treatment.

cattle are moved to a second high elevation pasture where they remain until September 15. On September 15 cattle are moved down slope into a mid-elevation elk winter range pasture and then into a low elevation winter range pasture, spending one week in each. On September 30, cattle are moved off the area to Wall Creek Stock Association private lands where they spend the winter months.



Interior electric drop fence.



Coordination between FWP, USFS and permittees.

Management Benefits

Following is a summary of the management benefits derived from this program as related to the objectives presented in the introduction

Low Elevation ELk Winter Range Pastures

Each year one pasture is grazed by cattle in the spring with grazing timed to provide substantial regrowth the same growing season. This regrowth is very nutritious and available for winter use by elk. A second pasture that was rested all growing season and grazed by cattle for one week during fall has most of the current year's growth available for wintering elk. The third pasture is totally rested from cattle use with the entire year's plant growth available for wintering elk. Although two of the three low elevation pastures are grazed by cattle, they all have a substantial amount of winter forage left for winter elk use.



Low reaches of the Wall Creek Wildlife Management Area.

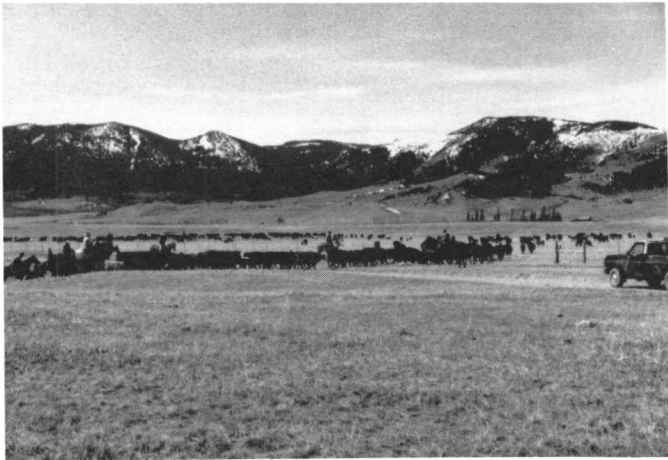
Mid-elevation Elk Winter Range Pastures

Because one of the three pastures is rested from cattle grazing and a second is grazed for one week in the fall, two thirds of the mid-elevation pastures provide substantial forage for wintering elk. Additionally, there is some regrowth provided for elk in the pasture grazed by cattle during June and early July.

High Elevation Elk Summer Range Pastures

Livestock grazing is timed so that cattle are in only one of the high pastures during the growing season or summer months. Cattle are then moved to a second pasture in early fall after the growing season. This leaves three of the four available pastures for elk summer use without the presence of cattle.

Rest-rotation principles were developed to maintain the soil and vegetation with the presence of livestock grazing (Hormay 1970). Although the grazing system has not been in place long enough to detect significant changes in species composition of plant communities, our vegetation monitoring effort is designed to document change over the long term.



Cattle moving onto a low elevation winter range pasture on May 1.

Observations to date indicate increased palatability of the major vegetative types on the Wall Creek WMA facilitated by the removal of accumulations of old plant material. For example, smooth brome fields and crested wheatgrass stands, which under no livestock grazing had a relatively large accumulation of residual vegetation, are now being used by elk.

Members of the Stock Association are currently receiving an additional month of livestock grazing. This resulted in an increase of 826 Animal Unit Months of grazing by cattle.

Other recent management activities not related to grazing were developed as a result of this coordinated man-

agement approach. For example, to minimize human harassment of wintering elk, the Wall Creek WMA was closed to all unauthorized human activities from December 1 through May 15 of each year. Although weather patterns are a major influencing factor affecting the way in which wintering elk utilize the WMA, there are noticeable differences in certain vegetation types currently being utilized by elk.

This program has eliminated the need for a full-time manager to be housed at Wall Creek since hazing wintering elk off private lands is no longer a major factor. This is partially a result of a closer and more productive relationship between FWP, private landowners and the Beaverhead National Forest created by this cooperative approach of looking beyond the fencelines.

This project was established as a management program rather than a full-scale research project. However, monitoring and evaluation is an important element and includes:

- * elk pellet group transects and bi-monthly winter elk counts to monitor elk distribution and use patterns.
- * permanently marked photo plots and vegetation transects, and cattle exclosures in each of the FWP pastures to document changes in species composition.
- * paired vegetation transects on BLM land and an adjacent FWP pasture. The BLM land closed to cattle grazing is indicative of the WMA prior to implementation of the grazing system and will, over time, facilitate detection of changes in plant communities resulting from the cattle grazing program.

In conclusion, mixed ownership of the elk winter range at Wall Creek is typical of many elk winter ranges, not only in southwest Montana, but throughout the West. The Wall Creek area serves as an example of a practical solution for managing both livestock and elk on the same piece of ground.

Literature Cited

- Hormay, A.L. 1970.** Principles of rest-rotation grazing and multiple use land management. U.S. Forest Service Training Text No. 4 (2200), US Government Printing Office, 1970 0-385-056. 25 pp.
- Schott, R.G. 1989.** Wall Creek Coordinated Resource Management Plan. U.S. Forest Service, Madison Ranger District. 6pp.