



Entrance to the Seven Mile Ranch headquarters located about seven miles east of Hugo, Colorado.

The Jolly family has owned and operated the Seven Mile Ranch near Hugo, Colorado since Jolly's father bought it in 1949. Tom Jolly decided to implement time controlled grazing on his ranch as a means to stop the range deterioration he was seeing.

The Seven Mile Ranch is cut by four main drainage areas and numerous side gullies. A water-bearing gravel lens varying from one foot to seven feet in thickness is located just above the shale in the riparian areas. The shale is from five to forty feet below the surface. The Seven Mile Ranch is dominated by two key range sites—alkaline plains and clayey plains.

The alkaline plains range site is found on clayey and clay loam soils and has the potential to produce 1,300 lbs./ac. of air-dry vegetative material annually. The site is predominantly perennial grasses with scattered shrubs. Potentially, the site can be dominated by alkali sacaton with blue grama, galleta, and western wheatgrass present. Shrubs include fourwing saltbush, winterfat, and rabbitbrush.

Under continuous, season-long grazing, annual production on an alkaline plains range site may regress to 600 lbs./ac. of air-dry material. Alkali sacaton decreases along with western wheatgrass, so the site becomes dominated by blue grama, galleta, prickly pear cactus and broom snakeweed. High value shrubs, such as winterfat and fourwing saltbush, decrease. Bare ground also increases.

The clayey plains range site is on clay or clay loam soils. The site produces about 1,000 lbs./ac. of air-dry material annually. Perennial grasses are dominated by western wheatgrass, blue grama, and green needlegrass. Other grasses and grasslike plants include needle and thread, buffalo grass, squirreltail, red threeawn, and sun sedge. Small amounts of winterfat, fourwing saltbush, prickly pear cactus, and other forbs are also present.

Under continuous, season-long grazing, annual production on the clayey plains range site may regress to 500

Grazing Management Impacts on Production on Color

Mary Peterson a

lbs./ac. of air-dry material. Cool season grasses decrease (western wheatgrass, green needlegrass, and needle and thread). Blue grama changes growth form from a bunch grass to a sodbound grass. The desirable shrubs, such as fourwing saltbush and winterfat, decrease. When blue grama becomes sodbound, the plants become less productive. With the disappearance of the cool season grasses, blue grama dominates the site. Less palatable grasses, such as red threeawn, sand dropseed, and tumblegrass also increase.

When purchased by Jolly's father, the ranch was poorly watered with four low producing wells, three to four dams, a few natural spring holes, and rain dependent water holes. When it rained most of the water ran off the ranch in a flood. Annual precipitation averages 14 inches.

After purchasing the ranch, Jolly's dad immediately hired a contractor to start building many large and small dams. His goals were to have the large dams create reservoirs, providing a steady source of water for the livestock, and to have the small dams slow the flood water, settle out the silt, and spread the flood water out to irrigate the bottoms of the draws.

From 1949 to 1965, cattle and sheep were run on the ranch. In the summer, the sheep herders moved camp about every four weeks. During the winter, the sheep were kept in permanent camps. The herders were instructed to

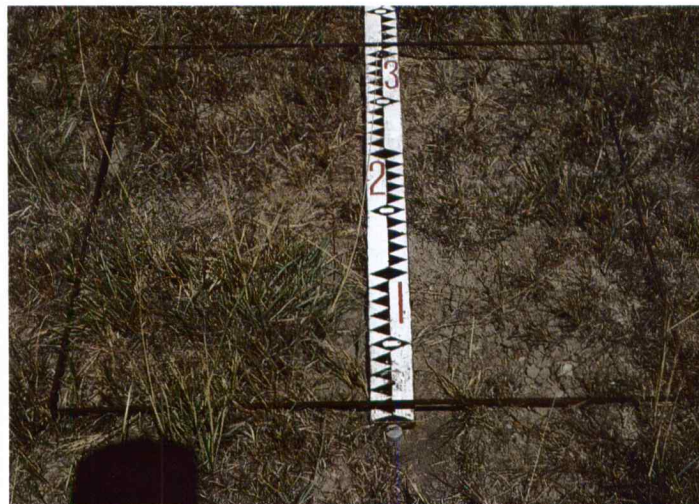


Photo point comparison from rangeland monitoring efforts. Photo A taken in 1984. Photo B taken in 1990. Both photos taken in early September. The range site is alkaline plains. The photos show a

Res Range and Livestock lo's Eastern Plains

Ben Berlinger

have the sheep graze hills, only going to the creek for water. The cattle had free choice of the range but preferred the creeks.

Jolly's father sold the sheep in 1965. From 1966 to 1971, he ran mostly cows. In the early 70s, Tom and his two brothers took over the day-to-day operations of the ranch. They ran some yearlings with the cows and maintained a summer-winter pasture rotation.

Tom took over running the ranch in 1977. During this same year, he converted about half the ranch to a continuous summer grazing program for yearlings. He had one pasture that was 12 sections and was continuously grazed all season long. Another pasture was eight sections split into two grazing units. Jolly used this pasture for a cow/calf herd. During the summer, the herd grazed one set of four sections. In the winter they grazed the other four sections. Another two sections were used by cows and yearlings. This program continued until 1982.

In 1981, Jolly attended a course on Holistic Resource Management (HRM). Believing in the principles, he converted the entire ranch to a time controlled grazing method in 1982 and 1983. During those same years, Jolly sold his cow herd and switched to yearling cattle. One of the main reasons Jolly started using HRM was to allow the range the rest and rejuvenation it needed each year.



Tom Jolly talks about his rangeland improvement goals involving the implementation of a highly intensive planned grazing system.

According to Jolly, the ranch began to deteriorate when they removed the sheep from the ecosystem. Continuous summer grazing on three-fourths of the ranch had turned out to be poor management with devastating effects on the environment. The draws were showing a decrease of cool season grasses and going more to the warm season grasses—blue grama and buffalo grass. Other downward trends included:

- Western wheatgrass, which should be abundant on these plains sites, receded downhill to the bottoms of the draws.
- Alkali sacaton decreased.
- Bare ground increased on the alkaline plains range sites. The result was more soil erosion and weed growth.
- Sodbound blue grama increased—mostly on the clayey plains sites.
- Watering locations were overgrazed.

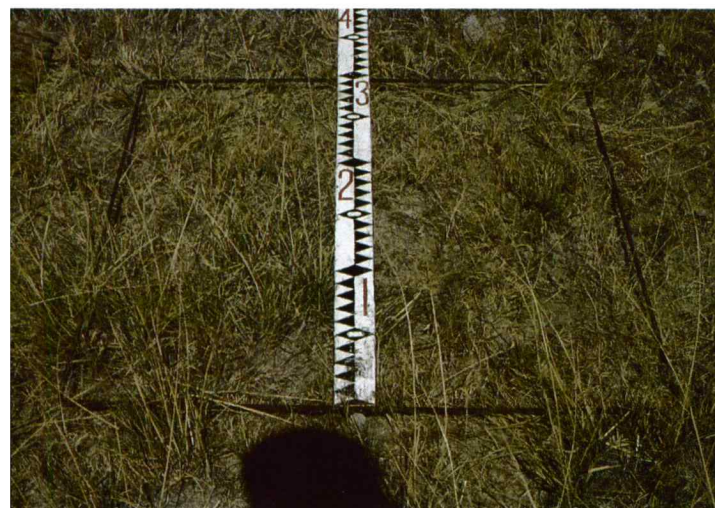
Jolly's new goals for the ranch were:

- To establish a sustainable condition for the ranch,
- To increase the number of different kinds of plants and animals,
- To improve the riparian areas,
- To improve plant cover and production,
- To increase stocking rates, and
- To improve the quality of life on the ranch.

Time Controlled Grazing

Under the new grazing method, Jolly cut the 12 section pasture into three cells. Each cell was four sections divided into eight pastures. An important concern with each cell is the distance from water and the number of animals in each herd. The eight sections formed one cell of 13 pastures. The two sections formed another cell of eight pastures.

After one year of experience using the time controlled grazing method and after attending more seminars and classes, Jolly realized that he could double the number of pastures and double the herd sizes. He then combined two of the four sections, decreasing the total number of cells to two. One cell now has 16 pastures. By having the 16 divisions, Jolly increases the rest period for the range



significant increase of alkali sacaton since 1984, particularly on the right side of the frame. Overall ground cover has significantly improved.

while decreasing the grazing time.

To implement the time controlled grazing method, Jolly installed 52 miles of electric fence to divide the pastures. He also put in an extensive watering system, which included two new wells and approximately six miles of pipeline. He also added some above and below ground storage tanks.

Large amounts of water can quickly flow from the storage tanks into the drinking troughs.

In the eight pasture cell, the average resting period for the pastures is 60 days. In the other cell that has more pastures, the average resting period is 65–68 days. The grazing periods on the different pastures vary from two days to about 11 days, depending on the growing conditions.

The idea behind time controlled grazing is to minimize how frequently and severely the livestock bite the plants. After the grazed leaves begin to grow back, the new leaves shouldn't be grazed again until after they have had adequate time to recover. As a rule of thumb, this rest-recovery time varies from 30 to 90 days or more, depending on the rate of grass growth. When the key forage is growing fast, it recovers sooner. Thirty days of recovery time is sufficient which means grazing periods are short, and livestock rotation is relatively fast. On the other hand, when the rate of grass growth is slow the rest-recovery time needs to be longer—90 days or more. In the slow growth scenario, grazing periods are lengthened, meaning the livestock are moved less often.

Results

As a result of this improved rangeland management, the yearling herd increased from 1,000 to 1,600. When figured on an animal unit equivalency basis, the grazing units produced per acre on the ranch doubled while maintaining performance.



Tom and Cheryl Jolly inspecting an alkaline plains range site near the center of a grazing cell. Aboveground water storage tanks are shown inside the cell center. Cattle had been removed from this pasture 13 days prior to taking the photo.



Electric fencing used on the Seven Mile Ranch. Yearling cattle are leaving a cell center after watering.

The rule of thumb under continuous, season-long grazing is that 50 yearlings per section will gain 50 pounds per head per month. This averages out to be 1.67 pounds per day. Under the new time controlled grazing method, the steers gained an average of 1.75 pounds per day while the heifers gained an average 1.6 pounds per day.

Staff from the Hugo, Colorado SCS field office started to monitor different points on the ranch in 1983. By using photo points, the SCS and Jolly could see what effects the new grazing management method was having on the rangeland. Photos were taken at the same time each year. Monitoring allows for maintenance of maximum flexibility so necessary changes in grazing management can be made.

Jolly says he now does more “brain work”—planning and monitoring controlled grazing. The result is less physical work as livestock are in a smaller area requiring less time and labor to provide greater care.

The monitoring effort indicates that some of the rangeland improvement goals have been attained. These include:

- Species diversity improved.
- Ground cover increased.
- Perennial grass replaced the bare ground around water points.
- Cool season grasses increased in the draws and side slopes.
- Alkali sacaton and winterfat increased on the upland sites.
- Success was limited in changing sodbound blue grama back to its natural higher production bunch grass state.

The Jolly's recently sold the ranch. But, Tom and Cheryl Jolly are very pleased with what they have accomplished on this land. Jolly believes the key to range improvement is reducing to a minimum the overgrazing of forage while increasing to a maximum the opportunity for plants to recover from being grazed.