

Rest-Rotation Grazing vs Season-long Grazing on Naval Oil Shale Reserve Allotment in Colorado

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Grazing management on lands managed by the Bureau of Land Management is currently going through dramatic changes in the type of grazing management to be implemented on public lands. This means that the grazing of livestock will be managed according to the needs of forage. This type of change in grazing concepts will be partially accomplished through deferred or rest-rotation grazing.

This article will show the results of rest-rotation grazing as compared to season-long grazing on three Naval Oil Shale Allotments in western Colorado. These allotments are located 6 miles northwest of Rifle, Colo., and cover about 25,000 acres. They are administered by the Glenwood Springs Resource Area of the BLM's Grand Junction District. These allotments lie adjacent to each other, have the same climate and the same vegetation-soil communities. They were historically used in common and historically received the same grazing treatment.

History of the Allotments

In the late 1800's and early 1900's, up to 24,000 head of cattle grazed this area, known as the Roan Plateau. (Later, part of this area became the Naval Oil Shale Reserves.) Oldtimers make the statement that "cow tails stuck out over the edge of the plateau like pins out of a pin cushion."

In 1935, the Department of the Navy and the Department of the Interior's Grazing Service (later to become the Bureau of Land Management [BLM]) signed an agreement to allow the Grazing Service to manage the surface resources of this area.

What followed in grazing management on the Roan Plateau area was typical of other public lands in the West. First grazing privileges were assigned to certain base properties of bona fide ranchers there already. Only these ranchers were allowed to graze their cattle on the Naval Oil Shale Reserves. In the late 1950's the BLM completed range surveys on the Reserves with the decision either to reduce livestock numbers further by an average of 60%, or to establish a rest-rotation system of grazing with no cut in cattle numbers. The Reserves would be split into three allotments—The JQS, The East Fork, and The Clough-Alber Allotments.

Both the reduction and the rest-rotation grazing system were a major change and very threatening to the ranchers; however, after a court test the changes took place in 1966. The ranchers of the JQS and East Fork agreed to go with the rest-rotation system with no cattle cuts and most of them worked very closely with the BLM to make the system accomplish the objectives. The ranchers in the Clough-Alber allotment decided to take a reduction in livestock numbers and continue their operations as before: cattle

operations took a 43% cut in numbers, while sheep were cut 61%.

Environment of the Allotments

The allotments are located on a rolling and dissected plateau and vary from 7,500 to 9,200 feet above sea level. The precipitation averages 18 to 25 inches a year and nearly every gulch has water the year around. Temperatures in summer range between 38 and 71° Fahrenheit.

The vegetation is typical of Montane Coniferous Forest. Tabulation of the vegetative types is shown below:

Conifer—4%
Mountain shrub—32%
Aspen—38%
Sagebrush—16%
Grass—10%

Prior to 1966, all three allotments had the following problems:

- 1) All creek and wash bottoms were cattle concentration areas and were left absolutely devoid of vegetation; not even annuals existed.
- 2) Soil was eroding in the wash bottoms.
- 3) Ridge tops were lightly used due to poor livestock distribution.

Grazing Systems

The grazing season on the Reserves is from June 16 through October 31.

The JQS Allotment has a three-pasture rest-rotation grazing system. About 960 cattle graze two pastures each year while the third is resting. One pasture is grazed during early summer and the other is grazed after the grass reaches seed shatter stage. In addition, permit is granted for grazing of 854 sheep, which is not used due to high cost of herders and other problems; however, cattle are not allowed to be used instead of sheep.

The East Fork Allotment has a four-pasture rest-rotation grazing system. About 623 cattle graze three pastures each year. One pasture is grazed during early summer, another, after the grasses flower, and another, after the grasses reach the seed shatter stage. The fourth pasture is rested.

The rest-rotation grazing systems have been closely followed with only minor trespasses of cattle in the rested pastures. The systems have not been broken by the ranchers wanting to turn out early for reasons of drought, late spring, or for other reasons. In most instances, utilization of the forage has not exceeded 66% a year on the average. Cattle and sheep are not allowed onto the early pastures until the grasses are deemed ready, from 6 to 8 inches of new growth.

The Clough-Alber Allotment has about 135 head of cattle grazing on a season-long basis. They usually graze the same

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Editor's Note: Two photo albums have been put together showing study photos taken in 1960, in 1973 and again in 1977. One of these albums is on display at the SRM headquarters in Denver, while the other is at the Glenwood Springs BLM Resource Area office.



First Water Gulch of the JQS allotment as it appeared in 1961 under season-long grazing.

areas, mostly wash bottoms. Two thousand sheep also graze the allotment from June 16 to June 30 and again, 1,100 sheep use it from September 12 to October 28. The sheep are herded from one area to another.

Results

At the present time the condition of the range (over all three allotments) is rated good.

The JQS and East allotments, both using the rest-rotation grazing system, have had the following occur due to rotating cattle and because of allowing forage species ample rest from grazing, thus allowing the species to become vigorous and reproductive:

1) Wash and creek bottoms have healed or are healing with a good mix of perennial grasses. Grasses that have moved into the bare bottoms are mountain brome, columbia needlegrass, blue grass, western and intermediate wheatgrasses. However, woody streamside vegetation has not returned to provide good fishing streams.

2) Soil erosion has been reduced.

3) Weaner weights of calves and lambs have increased since implementation of rest-rotation grazing.

4) Cattle utilize the ridge top forage due to smaller use areas or pasture units.

5) Ridges with land treatment continue to be reinvaded slowly by brush.

The Clough-Alber allotment has had the following continue or occur under season-long grazing, even though there has been a reduction in livestock numbers:

1) Creek and wash bottoms continue to be devoid of perennial grasses. Where healing has occurred, the grass species mix is only bluegrass with perennial forbs.

2) Ridge tops with land treatment have had little reinvasion of shrubs due to spring-fall sheep use.

3) Weaner weights have increased since reduction of livestock numbers.

Livestock Results

This information was gathered from ranchers who either kept records or remembered what calf and lamb weights were before and after the grazing systems were installed:



First Water Gulch as it appeared in 1976 after 10 years of rest rotation grazing. Note grass cover.

JQS Allotment—three pasture rest-rotation grazing system

Before 1966	Lambs 1970-1976
75 to 85 pounds	85 to 95 pounds

Before 1966	Calves 1970-1976
350 to 400 pounds	500 to 600 pounds*

*About half the ranchers used a Charolais Hereford cross. But now all the ranchers in this allotment run steers.

East Fork Allotment—four pasture rest-rotation grazing system

Before	Calves After
350 to 380 pounds	390 to 400 pounds

Lamb information was not available.

Clough-Alber Allotment—season-long grazing

Before	Calves After
350 pounds	390 to 400 pounds

Lamb information not available here either.

Conclusion

Rest-rotation grazing as compared to season-long grazing showed some distinct advantages on the Naval Reserve allotments.

Vegetation quality and quantity were improved over that of the season-long. The exception under season-long use was the ridge top land treatment areas, which maintained good quality forage due to spring-fall sheep grazing and light cattle grazing.

Animal weights increased after rotation grazing was implemented without livestock number reductions, whereas, under season-long grazing, weights increased only after livestock numbers had been reduced.

Rest-rotation grazing, however, did not improve riparian vegetation or streamside woody vegetation, such as willows. It appears that fencing will have to be done to improve stream-bank vegetation and stability.