



Optimizing Land Use on a Beef Operation: A Utah Example

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Introduction

One of the most important resources that a beef producer has is the pasture or range. This resource must be provided great care in order to continue producing beef cattle. The most important aspect of managing pasture and rangeland is grazing management. While many do not think of the art or science of grazing, it is the most valuable landscape tool that a rancher has and ultimately determines how long an operation can sustain itself (Hopkin, 2011).

By properly managing their land, producers have flexibility in cases of natural disasters, more sustainable production in both plants and animals, and are able to manipulate the land in order to reach objectives. Grazing management also allows for greater wildlife habitat and recreation areas (Hopkin, 2011). Several systems of grazing management exist today so a producer must decide which management system works best for their operation and set goals regarding the use of this important resource. This fact sheet will define grazing and describe grazing management strategies and how to decide which grazing system to choose.

Grazing Defined

Grazing is simply the act “of herbivorous animals eating growing pasture or cereal crop” (Medical-Dictionary). Animals have grazed by instinct since the beginning, but that is not what most people envision when they hear the word “grazing.” The majority of the public views “grazing” as the act of domestic animals consuming

on public land, biting the plants over and over again, creating mass destruction. This is not grazing, this is *overgrazing*. Although overgrazing is an issue that needs to be addressed, the destruction caused by overgrazing has little to do with the actual animal participating in grazing. Overgrazing is caused by a lack of management, not because of too many animals, nor the size or species (Hopkin, 2011).

Because of lack of knowledge, the public’s view of grazing is severely skewed by media and environmentalist groups. Examples of this are seen in Nevada and the Arizona strip where environmentalist groups are attempting to ban grazing for the protection of the sage grouse and desert tortoise (Broder, 2010; Kingsley, 2010). These groups do not understand the positive impact that grazing has shown to have on the land, plant diversity, and wildlife populations. They also do not realize that in 2009, 26 billion pounds of beef were produced in the United States; 15 billion pounds of that beef was produced by grazing (Coffey). Now, more than ever, the beef producer must pay close attention to grazing practices in order to keep the practice for future generations and for the future of the beef industry.

Grazing Systems

Grazing systems have been designed to protect plants from being overgrazed. An overgrazed pasture can take up to 30 years to recover (Cow Calf Management Guide, 2010). For this reason, the most important decision a manager

can make is what grazing system to use and how to execute it. Examples of current grazing systems are: continuous or season long, deferred-rotation, rest rotation and short duration. All of these systems have advantages and disadvantages to both the plants and animals. A manager must decide what his objectives are and what resources he has to make a proper decision.

Most Forest Service and BLM allotments require animals to be moved several times during the grazing season, but continual grazing is still a concern. Many private pastures and ranges are also continually grazed because the owners don't have other options. Season long grazing systems are common in Forest Service allotments and often what the public thinks of when they hear the word grazing. Continuous grazing allows the animal access to the rangeland or pasture for the full growing season, and does not allow for any rest period for the plants. In general this grazing method is discouraged, as plants that do not get rest have weaker root systems, allowing for invasive weeds and undesirable plants to grow in their place. Season long grazing systems allow for overgrazing to take place and the sustainability of the operation to fail. It also permits cattle to spend the majority of time in riparian areas, destroying water sheds and causing erosion resulting in less productive ground. In general, season long grazing may be the easiest system to manage, but will not be sustainable or profitable in the end (Cow Calf Management Guide, 2010).

Deferred-rotation systems use all the pasture and rangeland each year, deferring grazing on specific areas of the land every other year. This system is better than season long grazing because it allows plant species to go to seed at least every other year and attempts to keep cattle out of riparian areas. However, it does not allow for complete rest of any piece of land, and while there is significant difference in plant health, animal production stays the same. This type of system can be used for a producer who does not have a lot of resources, such as fencing and water, but wants to improve the health of key species and riparian areas (Cow Calf Management Guide, 2010).

Rest rotation grazing uses a system that allows for a portion of the land to be rested for a complete year while the remaining pastures are grazed. This system is much more management

intensive, and takes more resources such as fencing, labor for herding, and water to allow cattle to move from pasture to pasture. However, plant diversity is increased by allowing plants to have complete rest and go to seed. The plant root systems improve dramatically and nutrients are replenished. This system also forces cattle out of riparian areas and consequently provides healthier water sheds, and prevents erosion. Rest rotation grazing systems give producers a safety net in cases of drought or other natural disasters and allow the producer to manage for long term range health (Cow Calf Management Guide, 2010).

Short duration grazing systems separate large allotments into smaller paddocks and rotate the cattle frequently at high intensities. This gives all plants a chance to be grazed, but allows for a period of about 60 days for rest in each paddock. Several paddocks will get the chance to go to seed, as cattle are only in a small portion of the land at any given time. Hoof prints of the cattle have been shown to hold water and also press seeds into the soil (Hopkin, 2011). Because the cattle are grazing at high intensities, they become less selective and allow each plant to be grazed equally. This practice increases plant diversity, increases animal productivity and significantly increases the health of water sheds. Producers in dry areas must be careful when using this method, as each plant will be grazed and there may not be adequate rest time in these areas. Producers also must be committed, as this system is the most management intensive and does not leave room for error. While the benefits of this system outweigh the disadvantages, managers must decide if they have the labor, fencing, and water to execute this system (Cow Calf Management Guide, 2010).

Deciding Which Plan Is Best

To decide what grazing system is best for the operation, a producer must first decide what his objectives are, both in animal production and in improving the quality of land. He must also determine how much land is available for grazing and how many animals will be grazed. Finding key species and knowing their growth cycles will also help determine what kind of grazing a producer can do in the area. Climate and water available for irrigation must be accounted for to determine how long plants will need rest for regrowth. The amount

of labor available for herding and fencing must be calculated and other resources such as fencing and available water for livestock must be accounted for. After a producer figures out what his objectives are, and what resources he has, he can then weigh out the advantages and disadvantages of each grazing system to make a decision on what grazing system to use. In all systems, “duration, stocking rate, animal distribution, and times of grazing in relation to plant growth stage are the most important factors for grazing” (Cow Calf Management Guide, 2010).

After a producer has calculated all resources and has made a decision, observations must be made and records kept to adjust any overgrazing issues as needed. Observations of where the cattle are, how well key species are doing and what the overall pasture and rangeland looks like need to be recorded and paid attention to. If key species are overgrazed, or cattle are remaining in one place too long, management should change to accommodate these issues. In general, if a pasture is being overgrazed, it may be because stocking rates are too high but often it is that the animals are left on the pasture too long resulting in plants not getting enough rest. Grazing management is the key to preventing and changing these problems (Cow Calf Management Guide, 2010).

An Example of Optimizing Pasture and Rangeland

Deseret Land and Livestock (DLL) is a well-known ranch located in Rich County, Utah. They are known for their profitability and their abundant and diverse wildlife populations. They operate on more than 200,000 acres of land, have thousands of sheep and cattle, and are currently quite profitable. However, in 1983, they had a much different situation. DLL was not profitable, and their wildlife status was much like the rest of the Western United States; minimal. Plants were scarce, riparian areas were damaged and erosion was a problem. DLL hired a new ranch manager in 1983 and his evaluation resulted in the operation to change one thing; their grazing practices (Hopkin, 2011).

The arrangement is set up as a time controlled grazing system. Since 1983 they have divided their cattle into five herds. They divided their allotments of land into separate pastures, so each herd of livestock has 20 pastures to rotate

through. They begin grazing the livestock in April and allow them to graze until Thanksgiving, rotating each herd to a new pasture every 10 days or more or less often. Most of their pastures are heavily stocked which forces the livestock to compete for all different plant varieties and decreases selection. Moving them every 10 days allows them to deplete the feed source, but does not allow the animals to overgraze.

With the cattle being moved so frequently all plant varieties have a chance to go to maturity, thus providing a more abundant and dense area for all animals to utilize. When the pastures in front of the livestock go to seed, they benefit by livestock stomping the seeds into the ground. The footprints of the animals hold in moisture, and more seeds make it into the soil. When the seeds grow the next year, the growth exceeds plants in areas that are not grazed.

DLL has also observed more riparian vegetation than in areas that are not grazed or in areas that use season long grazing. In 1976 only 21% of DLL had riparian vegetation while in 2006, over 72% of the land had riparian vegetation. This provides for better watersheds and an overall healthier landscape.

Today the number of cattle on the ranch has nearly doubled and vegetation has never been healthier. Because DLL’s grazing system helps increase plant density and diversity, wildlife populations are also thriving. Moose populations have grown from 50 to 200, the elk 1500 to 2400. The antelope, which didn’t exist on the ranch in 1983, now have a population of approximately 600. Mule deer have declined from 4500 to 3500, but had a 70% winter kill off in 1983. Sage grouse, a native species of bird that is currently under much debate, has increased from 120 birds in 1983 to 1800 birds in 2001. As a bonus, there are approximately 276 species of birds, and is currently the only working ranch to be listed as a bird sanctuary by Audubon (Hopkin, 2011). All of this shows that grazing, when used effectively, can enhance wildlife populations as well as be used as an effective landscaping tool.

Conclusion

Land management is the most important resource that a beef producer has. It is the single most important aspect of a beef operation that will

determine if the operation will be sustainable. A manager must decide what resources the ranch has, and what his objectives are to determine what grazing strategy to use. Observation of the plants and livestock is necessary to determine if the grazing strategy is correct and must adjust when needed. A producer must remember that: Range beef cattle are not the real products, range plants are. It is easy to forget that ranchers are selling plant nutrients. The grazing animal is merely a harvesting machine” (Cow/Calf Management Guide, 2010) and if a producer can adhere and understand this, it ensures that his beef operation will have a greater likelihood of success.

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