

Water: The Lifeblood of the Range

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Abstract

The control of grazing is an important part of range management. Before ranchers are able to graze a pasture efficiently, a good livestock water supply needs to be developed. Many different methods can be used to supply the water. Good water management can benefit cattle as well as wildlife.

Introduction

Water management for livestock is an important part of range management. Water management includes developing water throughout the rangeland and making sure that it is done correctly. With today's technology, there are many different ways that water can be managed. Water needs to be spread out across pastures to manage grazing. If there is not adequate drinking water, grazing will not be at its best. Without water, the range is not as useful.

Water Management on My Family's Ranch

Water management has been an important part of the ranch since my great grandfather started it in 1940. Over the years, the way we manage our water has changed. My grandfather has shown me some water developments on our ranch including tank dams built by his father using horse teams, windmills, and storage tanks. Some of these I have helped install in recent years. By spreading water throughout the ranch we are able to distribute and rotate livestock to keep from over and under grazing.

Why is it Important to Spread Water Throughout a Ranch

This management practice has been important to ranchers for a very long time. Ranches rely on the infrastructure of the range. Infrastructure is what is needed for the range to be utilized and properly managed. The range must provide grass, minerals, and water. Ranches used to be located along rivers, creeks, and other natural sources of water because they did not have the technology that we have today to develop alternatives to these natural water sources.

Cattle that have to travel much more than a mile from a water source to graze do not utilize the forages very well. They tend to stay around the water source over using the forage around the water source, leading to poor range condition, runoff, and soil erosion. This leaves the other parts of the pasture under grazed. Under grazing is just as bad because it allows too much litter to cover the soil not allowing any water to reach the soil. It also increases fuel loads for wildfires.

When any type of livestock is forced to travel great distances between forage and water, they use more energy. Young sucklings are most susceptible to lack of water availability. They are affected by the reduced milk production of the mother and are less likely to travel all the way to water with their mothers on hot days. This is bad because the young suckling becomes separated from its mother, meaning it does not get the nutrition it needs to thrive and could die.

Water Management Methods in Southeast Colorado

There are many different types of livestock water management methods in southeast Colorado. Methods have changed overtime, with new advancements in technology. The major methods are tank dams, windmills, live water, wells, pipelines, and solar wells/pumps. All methods have advantages and disadvantages.

Tank dams are man-made ponds. Most are found in draws, where water flows in more abundance than in the upland areas of the pasture. They range in size from large to small, depending on the size of the draw. Tank dams rely on rainfall, which makes them unreliable from year to year. They might be good in a year with lots of rain, but in a drought tank dams do not do much. Tank dams are bad in the winter because cattle may drown. They can walk out on the ice and fall in. Sometimes cattle do not drown after they fall in. They become hypothermic and die a couple hours after the incident.

Windmills are large structures that use wind to pump water. They have wheels made of blades that are turned by the wind, which turns gears in the head, moving the sucker rod up and down pumping the water to the surface. Windmills are built over wells, so a well has to be drilled. Back around the turn of the 20th century windmills were state of the art, but today they are being replaced by electric pumps. Windmills have a limited pumping capacity in summer because they are dependent on the wind. One advantage is that they pump overnight in the winter keeping the water thawed, although an insulator is needed at the top of the well to keep the water from freezing.

Live water is running water like a river, creek, or spring. Live water used to be key to any ranch before wells and tank dams. The depth and amount of water varies between natural deep pockets to shallow areas. Cattle grazing for too long of a period in riparian areas can cause erosion, which can affect the amount grass that can be grown. Fences that cross live water require water gaps which can wash out during floods and create a mess. Live water is open most of the time during winter, which means ranchers do not have to break ice. Cattle tend to continuously graze live water areas, hug the water, which means the rest of the pasture does not

get utilized. Rotational grazing and proper stocking is needed to maintain healthy riparian areas. In the winter cattle can fall in and suffer the same effects as tank dams.

Wells and pipelines are the most used water management method today. It is a system of pipelines that feeds water from one well to many different tanks. This allows for more water to be spread throughout the ranch making it easier to obtain good livestock distribution and implement proper grazing management. This places a lot of dependence on one source/well, which could make it go dry faster. Another problem is that if one pipeline or float breaks it can bring down the whole system. Storage tanks and a system of valves can be used to shut off the broken area and still provide water to the other tanks. Since the pipeline system is pressurized breaks in the pipelines or tanks must be located and quickly repaired. Storage tanks have the advantage of usually being located at the highest point on the ranch so that water can flow through the pipelines using gravity.

Solar wells/pumps are the newest method. Instead of power being supplied by power lines, a solar panel is used to supply the electricity. Solar wells pump all day on clear days, but not at night or on cloudy days. This can create problems in the winter, because without water flowing into the tank the water can freeze, requiring the rancher to break the ice every day. One benefit is that there is no need for a time clock, because the pump goes off and on with the sun.

Effects of Water Management on Wildlife

Good water management can benefit wildlife as well as cattle. Wildlife such as deer and elk tend to stay in an area with adequate food and water. Properly managed pastures have an adequate food supply throughout the pasture, but water is a different story. Although some animals can live in areas without water, they do not like to venture long distances from a water

source. By spreading water throughout pastures, wildlife can spread to different areas allowing for a larger population to form.

Conclusion

Water management for livestock is an extremely important part of range management. Water management helps ranchers control grazing to manage the range. By spreading water across pastures, cattle and wildlife can be better distributed and graze the range evenly. Most importantly, rotational livestock grazing can be successfully implemented on the ranch. Without proper livestock water management, proper grazing and range management is impossible.

References

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