South Dakota Rancher©

Management tips for South Dakota livestock and grassland managers

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Monitoring Rangeland and Pastures

Much of the attention given to record keeping in ranching operations often falls under recording calf weights, open cows, or keeping track of diesel fuel bills. However, tracking changes in rangeland and pasture conditions is equally important to measuring the short- and long-term effect of management practices on the forage resource and may also serve as an indicator of when an emergency drought plan should go into effect.

Often times, livestock performance serves as a proxy for rangeland and pasture monitoring activities. Tracking animal performance on rangeland and pasture is certainly worthwhile and encouraged, however, rangeland and pastures can deteriorate appreciably, long before livestock performance begins to suffer.

> ***"It is difficult to manage something that hasn't been measured"***
>
> - Peter Drucker

There are three things to remember about rangeland and pasture monitoring in ranching operations: 1) it must be quick, 2) it must be easy, and 3) it must be useful information. If a monitoring program doesn't meet those three criteria, chances are it is not going to get done because extra time is generally not available to maintain complex or time consuming monitoring activities.

Fortunately, there are some simple monitoring techniques that every ranch can use to quickly and effectively track changes in rangeland and pasture health. These methods include: 1) visual observation, 2) forage utilization mapping, and 3) using photo points.

Visual Observations

Visual observations generally include a list of things that a manager should be appraising at permanently marked points throughout a pasture. These things can include:

1) Abundance of key forage species
2) Abundance of weeds
3) Stubble height of key forage species
4) Soil erosion
5) Ground cover

Generally, information gained from visual observations are used in combination with information gained from other monitoring activities.

Forage Utilization Mapping

Utilization is the proportion of the current year's forage yield that is consumed or trampled by grazing livestock. Livestock distribution and utilization usually vary quite a bit within a pasture. Some areas of the pasture can be over utilized while other areas are under utilized. Mapping the pattern of utilization throughout a pasture is a good way to identify over-used and under-used areas. Utilization maps can allow the manager to make critical management decisions based on pasture use.

Utilization can be measured in a variety of ways, but measuring residual stubble heights of key forage species and the use of grazing exclosures are the most common (Figure 1).

Figure 1. The use of a grazing exclosure to assess forage utilization. (Photo E. Mousel)

Photo Points

Identifying several permanent points throughout a pasture and taking annual photos is a great way to monitor management effects on rangeland and pasture. Photos can be an up-close of a specific plot in the pasture or a landscape photo that includes a landmark so the photo can be repeated annually (preferably both) (Figure 2).

Your photographic equipment does not need to be anything fancier than a basic 35 mm with color film or a digital camera with reasonable resolution (fuzzy or pixilated pictures aren't very useful).

Figure 2. Landscape view of pasture use at a photo point. (Photo: E. Mousel)

Using plot frames to mark close-up photo points is as easy as making a frame out of PVC and driving some stakes into the ground so you can put the frame in the same place every year (use stakes that won't puncture pick-up tires) (Figure 3).

Figure 3. Use of a permanently marked plot frame at a photo point. (Photo: E. Mousel)

The important thing to remember about monitoring rangelands and pastures is to keep adequate written records (and photos) of your monitoring activities so you can compare the assessments over a long period of time so the true effect of management on the forage resource can be identified.

For more information on monitoring your forage resource or if you would like to start a monitoring program for your operation, contact your local SDSU Cooperative Extension Service Educator, Dr. Eric Mousel, 605-688-5455, eric.mousel@sdstate.edu, or Dr. Roger Gates, 605-394-2236, roger.gates@sdstate.edu.