



United States Department of Agriculture  
Natural Resources Conservation Service

# Drought Management for South Dakota Grasslands

## South Dakota

SD-FS-80



Drought-stressed grassland in Campbell County, SD, June 2006



Drought-stressed grassland in Hand County, SD, July 2006



Drought-stressed grassland in Hand County, SD, July 26, 2006



Drought-stressed grassland July 2012

Drought has and always will be a common occurrence in South Dakota. Grassland managers deal with drought before, during, and after its onset. Grasslands are adversely affected by drought regardless of condition, but healthy and vigorous grasslands are less impacted and tend to recover much faster when growing conditions are more favorable.

Ranchers tend to be optimists. Optimism may help to keep one's sanity in the face of difficult drought-related decisions, but it may also cause ranchers to hang onto cattle too long.

Two questions may help guide decision making: 1) what is the probability that substantial rainfall is going to occur in the foreseeable future, and 2) if it does rain, how much "good" is it going to do?

Based on research in the Northern Plains, over two thirds of the annual grass production is produced by rainfall in the months of April, May, and June. If sufficient rainfall does not occur during this period, chances are that grass production will come up short.

Even if facing a shortage of rain, drought impacts can be reduced with proper planning before the drought ensues. This starts with a sound grasslands conservation plan, which should include these basic elements:

- Resource inventories identifying grassland production and condition.

- A plan map showing existing and planned improvements.
- A feed and forage balance computation to ensure adequate forage to meet livestock needs.
- A planned grazing system with well-defined goals and objectives.

### Benefits of Implementing Conservation

Strategically implementing a grazing system as part of a conservation plan will result in healthy and vigorous plant communities. Research in South Dakota has shown that grasslands in better condition will recover two-to three times faster than grasslands in poorer condition. Grasslands in higher condition also typically provide a higher plane of nutrition for livestock.

Some common practices included with a grasslands conservation plan are:

- Grazing systems are developed around a feed and forage balance. This ensures that the livestock match the capabilities of the available resources, and helps keep both the plants and the livestock healthier.
- The "take half, leave half" principal (50 percent utilization by weight) is used to set initial stocking levels. Plants need leaf area to photosynthesize and produce carbohydrates to maintain a healthy root system.

- Distribution of livestock is optimized to achieve greater efficiencies in utilization. This may include good water distribution, fencing, and strategic placement of supplements.
- Forage reserves are often designed into grazing systems in order to build flexibility for severely dry periods.
- A well-designed grazing system will include alternate forage sources such as cover crops and hay aftermath that can be used to offset reliance on the grasslands.
- Utilizing different classes of livestock (i.e., yearlings, stockers) can increase flexibility in marketing and drought management. A suggested target might be to have 30 percent to 40 percent of the livestock comprised of classes other than the breeding herd.
- Resource monitoring is key to determining the success of the grassland conservation plan, and is critical in determining needed adjustments.
- A drought contingency plan is crucial to have in place before the drought ensues. Setting “trigger points” of action ahead of time will help to ensure that appropriate actions are taken before resource degradation occurs and/or livestock health is impacted.

## Developing and Implementing a Drought Contingency Plan

No one can predict when the next drought will occur, only that it will occur at some point. However, the effect on potential grassland production can be estimated with the help of the **South Dakota Drought Tool**. The South Dakota Drought Tool utilizes precipitation records to estimate the current drought status, and the potential future production at certain times of the year. This Tool can also be used to help producers develop a drought contingency plan which is a key part of an overall conservation plan.

Some considerations that may be included in a drought contingency plan are:

- Delaying turn-out dates and utilizing alternative and/or introduced forage sources.
- Reducing length of occupation periods, especially in the early part of the season.
- Make more use of alternative and/or introduced forage resources as much as possible.
- Ensure livestock water sources are reliable and working properly. Evidence suggests that if livestock run out of water, they will tend to overindulge when it is available.
- Impacts to livestock body condition scores tend to lag behind the impacts to the grass resource, so be sure to continually monitor the condition of the grasslands and not rely solely on the condition of the livestock.

- Implement herd management practices to reduce total forage requirements. This could include: stepped-up culling of livestock that may fall slightly outside the “core herd” characteristics, reductions in the production of replacement heifers for one year, early weaning of calves to maintain cow condition into the winter thereby reducing winter feeding requirements and improving breed-back.
- Use caution on utilizing late season or secondary “green-ups” in a drought year. When plants break drought induced summer dormancy, this growth will be produced from very low levels of stored energy, which may further reduce reserves needed for winter survival and spring green-up the following year.

## Grasslands Conservation Plan

The most effective management for drought occurs *before* the drought happens with the development and implementation of a good grassland conservation plan. When implemented, this plan will reduce short-term and long-term drought effects.

### For More Information

Contact your local Natural Resources Conservation Service Office for assistance in the development of a Grasslands Conservation Plan. NRCS is located within local USDA Service Centers, and is listed in the telephone book under U.S. Department of Agriculture. On the Web, visit: <http://www.sd.nrcs.usda.gov>.

## NRCS South Dakota Social Media

 [http://www.twitter.com/NRCS\\_SD](http://www.twitter.com/NRCS_SD)

 <http://www.youtube.com/user/NRCSouthDakota>



[http://www.flickr.com/photos/nrcs\\_south\\_dakota](http://www.flickr.com/photos/nrcs_south_dakota)

Photo Gallery