

# Diagnosing Grassland Drought Conditions

BROOKINGS, S.D. - This spring may have provided the perfect weather for calving, however the lack of moisture out on the range has cattle producers worried about forage production this growing season, explained Pete Bauman, SDSU Extension Range Field Specialist.

"A rancher told me the other day, 'if calving goes well, expect the pastures not to look so good.' There is a lot of truth to that statement," Bauman said. "As we know April and May rains impact overall range and pasture production for the remainder of the growing season."

Current drought conditions

Before determining the best grazing options during drought/semi-drought conditions, Laura Edwards, SDSU Extension Climate Field Specialist said it is important to understand the moisture conditions on your grassland.

"Drought is tracked throughout the U.S. via the U.S. Drought Monitor," Edwards said. "Based on the latest U.S. Drought Monitor data, current drought conditions across South Dakota

indicate most of the state is abnormally dry (D0) to moderate drought (D1)."

Predicted grassland moisture levels can also be reviewed at the National Weather Service's Climate Prediction Center website. "This site provides predictive models for temperature and precipitation in timeframes which include a six to 10-day outlook; an eight to 14-day outlook; a one month outlook; and a three month outlook. "According to the current Climate Prediction Center's 6 to 10-day and eight to 14-day outlook, the precipitation prediction map shows most of South Dakota in a band of below normal precipitation," Edwards said.

She explained that climatic trends often track well with growing conditions. Bauman added that the South Dakota Natural Resources Conservation Service (NRCS) provides the South Dakota Drought Tool for assessing current and predicted grassland conditions.

"According to the most updated drought maps for April and July, grassland conditions over most of

eastern South Dakota are projected to produce at about 75 percent of normal annual forage," Bauman said.

He added that prediction models are a bit more optimistic during the peak, forage-producing month of July. "Models indicate average forage production for most of the eastern South Dakota will range between 75 percent and 85 percent of normal."

As for western South Dakota, Bauman said the production models predict close to normal grassland production levels; with the exception of western counties in or near the Missouri River.

Producers interested in accessing this tool may visit the NRCS website and download it for free. "The South Dakota Drought Tool provides default information based on local information provided by nearby weather stations. It can also be customized by using rainfall information specific to each ranch," Bauman said.

With this tool, Edwards explained that current rainfall accumulation and temperatures are depicted graphically in comparison to historical averages.

"This tool does not base outputs on future weather inputs; rather on it is based on moisture received to date. So, based on current conditions forecasts of growing season vegetation production are provided as guidance for appropriate management responses," Edwards said.

Bauman added that when used with other resources like the U.S. Drought Monitor or the National Weather Service's Climate Prediction Center, a grass manager can begin to identify management options based on various scenarios.

Drought is a normal weather pattern in South Dakota

Here in South Dakota, drought is a normal occurrence. This is evident in a 95-year rainfall map plotted by Sandy Smart, SDSU Extension Rangeland Management Specialist and SDSU Professor. Using rainfall data from 1909 to 2014, Smart plotted rainfall at the SDSU Cottonwood Research Station near Philip.

"In that timeframe, 28 years experienced drought conditions. In other words, one out of every three years experienced drought," Smart said.

This trend holds true statewide, said Edwards. She has reviewed statewide climate data as well as the U.S. Drought Monitor data since 2000. "Over the last 15 years, South Dakota has only been drought-free about one-third of that time," Edwards said. "Because of this, in South Dakota, it is a wise decision for grassland managers to anticipate and plan for drought conditions."

Planning for drought While it is important to recognize the usefulness of the drought tools, their value is greatly diminished if they are only utilized when a crisis develops, Bauman

said. "The real power comes when plans are in place before drought conditions occur," he said.

Drought planning, Bauman explained, requires prudence and caution, recognizing that grass, not livestock, is the base asset to be managed and protected.

If no drought plan exists for the farm or ranch, the first step he said is assessing potential effects of current and predicted drought before those conditions force decisions.

"While it is often said the worst time to plan for a drought is when you are in one, and when emotions are running high, it is always wise to start the process - assuming conditions may get worse before they get better," Bauman said.

He explained further that the drought planning process challenges grassland managers to take stock of the situation through objective and pre-determined indicators or 'trigger points' for decision making.

"Generally, trigger points begin with assessing whether the previous year was a drought or not," Bauman said. "Once that baseline is established, decisions can be based on calendar dates that are associated with tangible and measurable indicators, such as rainfall conditions during the previous month."

In addition to trigger dates, Bauman said drought plans also include strategic actions such as increasing or decreasing stocking rates,

as well as guidance for more decisive actions such as culling or destocking.

The National Drought Mitigation Center at the University of Nebraska-Lincoln is an excellent resource for starting or refining a drought plan for the ranch. Bauman encourages grassland managers to visit their impressive webpage dedicated to drought planning for the ranch.

2015 Pasture Turnout Considerations

As we approach the end of April, we are starting to see livestock going out to summer range. At this time, no one is quite certain what type of late spring and early summer growing conditions we will see, but trends indicate that we should prepare for a dry year with less than normal production throughout much of the state.

"As indicated above, conditions in the east are a bit worse than those in the west," Edwards said.

Edwards said that eastern South Dakota pasture managers may be positioned well to:

1. Either delay turnout by relying on left over feed stores, or;
2. Move ahead with grazing plans that target early cool season grasses, but have the flexibility to return livestock to designated areas using harvested/stored feeds if pasture conditions do not improve within the first several weeks of the growing season.

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