



Considerations for Preparing a Drought Management Plan for Livestock Producers

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Drought dramatically affects cattle producers. Apart from lack of water, drought severely limits forage production on rangelands. During August of 2002 according to National Agricultural Statistics Service, throughout the grazing season 8 percent of Wyoming rangeland and pastures were considered to be in Poor or Very Poor Condition as opposed to only 5 percent of these lands in these categories in 1999.

Average season-long condition has also been variable. In 1999, over the entire grazing season, only 1.4 percent of grazing lands averaged conditions of Poor or Very Poor while in 2002, 66.5 percent of grazing lands in the state fell into these categories. At least 40 percent of grazing lands averaged this rating over the grazing season in 2000, 2001, 2002, 2004, and 2006.

In a recent survey of Wyoming cattle producers, the majority of responses indicated they had experienced multiple years of drought (Nagler et al., 2007). Moreover, some scientists predict extended periods of drought may become more common.

The results of the Wyoming cattle producers survey (Nagler et al., 2007) showed producers are very concerned with decreased forage potential, decreased sales weights, and reduced owners' equity during drought. This survey also showed producers in Wyoming used multiple strategies to deal with the drought, which resulted in multiple impacts on their operations. Moreover, producers indicated that developing a drought management plan was a very high priority.

Developing a drought plan on paper is important to understand the potential consequences of management alternatives and plans on operations prior to enactment. Many economic considerations must be addressed when preparing a drought management plan. For example, a producer who

needs to ensure current year cash flow may have incentives to graze heavier than the land can handle but may ultimately reduce future carrying capacity. A producer in a better cash flow position may allow the purchase of additional feed for his/her herd to ensure continuity of the genetic base of their breeding stock. To ensure long-term success, a producer must prepare a plan for dealing with drought that at least considers the long-term resource and financial implications of current decisions. Although there is no single "fix all" plan applicable to all producers, each producer's plan must address some basic questions.

1. "What is the state of my environment?"

This includes not only the physical range and water resources but the state of the market. A producer must look at the current situation and develop expectations about how the situation may change over the next several years. For example, are current predictions for the drought to be severe or last more than one year? Ponnamaneni (2007) found that for Fremont County, Wyoming, between 1949 and 2006, there were three 3-year periods, three 4-year periods, and one 8-year period in which spring precipitation was below average.

Are you in a multiple-year or one-year drought? A plan for a single year of drought is different than preparing for a multi-year drought. A producer may find it beneficial to have several drought contingency plans such as having a plan for a drought expected to last one year, one that lasts a short time such as three to four years, and/or one for a drought lasting a longer time such as eight to 10 years.

Do extension market specialists predict cattle prices will be strong or weak in the coming year or years? Some recent research at UW has shown that, if prices are high but expected to turn down soon, a producer may find it optimal to liquidate some of his/her herd during the current drought at high prices and restock during lower prices. Conversely, if prices are down but expected to rise, a producer may find it beneficial to allow additional feed through the drought to bring more animals to market when prices are higher (see Ritten et al., 2010).

Developing several different contingency plans for different environments will help the producer be prepared for different drought and market states.

2. "What is (are) my goal(s) for coping with drought given the different environments determined in step one?"

First, a producer must realize that having multiple goals may result in conflicts related to management decisions. For example, two common goals, "meet cash flow needs" and "ensure long-term profitability," often come into direct conflict. However, producers should know their goals in a drought management plan. If there is more than one goal, it may help to prioritize each goal. These goals also need to be described in terms of time. For example, is high cash flow important only this year or do I need to ensure cash flow for the duration of the drought? Priorities also need to be stated in terms of time. If cash flows are important for the duration of the drought, is the producer only concerned with the sum of cash flows over the planning horizon or is there a minimum amount needed per year?

3. Once goals have been established, a producer should ask, "What will drive my ability to reach this (these) goal(s)?"

For example, a producer concerned with cash flow needs may require considering how many animals should be taken to market and when. If maintaining rangeland health is the primary goal, a producer may be concerned with monitoring grazing pressure and reducing pressure on pastures through aggressive rotation and whether animals need to be liquidated to maintain rangeland health.

4. Once a producer has established what will drive his/her ability to meet their goals given a particular drought environment, developing a set of steps or a tactical or implementation plan needs to be laid out. Once the environment is assessed and the goals prioritized, a producer must determine what must be done to meet the goal(s). For example, a producer concerned with maintaining a large herd size will need to develop a plan for how much and what type of feed should be purchased and/or leased. This may require develop-

ing a price goal for the feed and plan for how much additional funds will be borrowed to meet this goal. Or, if a producer is concerned primarily with maintaining rangeland health, a producer will need to develop estimates of how much the forage requirements of the herd can be reduced to ensure future productivity. Once a producer knows how much to reduce forage demand, he or she can compare alternatives such as partial herd liquidation, early weaning, or alternative herd characteristics to determine which strategies best meet his or her prioritized goals such as maintaining high cash flows or owner equity.

5. Once steps one through four have been accomplished, the producer should consider the potential long-term consequences of the plan for each environment scenario considered. For example, a producer concerned with cash flow in the current year will most likely have similar goals following the drought, but will current actions aimed at ensuring current cash flows allow the same level of cash flows to be maintained after the drought? To assess long-term consequences of a drought management plan, a producer must understand what current actions may mean for future range and animal productivity as well as financial position of the operation. If the producer is concerned about the long-term productivity of the range, this step may require rethinking initial goals and/or adjust implementation steps to address potential longer-term consequences of drought and the drought plan.
6. As the drought event unfolds, the producer will want to evaluate the environment and the management plan and make necessary adjustments as expectations about the environment and expectations about long-term consequences evolve. For example, a producer prepared to manage a yearlong drought will have to alter his or her plans if the drought persists for an extended period of years. At that point, the producer may switch to or implement the drought management contingency plan developed for a multiple-year drought event.

Research at UW is addressing many of these trade-offs in terms of grazing management. Although there is no drought management plan correct for all producers, these considerations can help develop plans that allow producers to make better decisions during adverse conditions. Developing drought plans for different environments should help producers consider long-term consequences and better meet goals during drought events than just trying to survive until the drought breaks. For a discussion of tax implications of alternative drought management strategies, see the referenced work by Schroeder and Ehmke (2008).

For more drought-related work, see the other fact sheets in this series:

Two Common Drought Management Strategies and some Considerations for Wyoming Cattle Producers, [B-1218](#)

Price or Weather – Which Signal Should Livestock Producers Follow?, [B-1221](#)

Comparison of Alternative Cattle Management Strategies Under Long-Term Drought, [B-1219](#)

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Nagler, A., C. T. Bastian, J. P. Hewlett, S. Mooney, S. I. Paisley, M. A. Smith, M. Frasier, W. Umberger, and P. Ponnamaneni. *Multiple Impacts – Multiple Strategies: How Wyoming Cattle Producers Are Surviving in Prolonged Drought*. University of Wyoming Cooperative Extension Service. [Bulletin B-1178](#). April 2007.

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Schroeder, Alan, and Cole Ehmke. *Tax Implications of Selected Drought Management Strategies*. University of Wyoming Cooperative Extension Service. [Bulletin B-1195](#). December 2008.

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