



KNOWLEDGE TO GO PLACES

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DROUGHT IMPACTS ON LIVESTOCK OPERATIONS



Discussion Points For Dealing With Drought

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INTRODUCTION

Drought is an event that makes current management challenges faced by livestock producers even more difficult than it was previously. The occurrence of drought is often unexpected by many livestock producers. But then we are a very optimistic bunch aren't we?

The frequency of drought on a short-term basis is actually very common. Compiled weather data from a number of Colorado reporting stations can demonstrate clearly the drought is a very common happening, in fact it happens most of the time.

Percentage of Years that Precipitation is BELOW AVERAGE:

- Rocky Ford Station - 62%
- Holly Station - 61.8%
- Pueblo Station - 59%
- Akron Station - 58%

Since the event of drought is actually common, possibly we should look at the timing and seasonal impacts of drought to determine why some drought events hit livestock production operations harder than others.

SEASONAL IMPACTS

During drought periods the effect varies with when and how the water shortages occur. Let's discuss some of the impacts for individual seasons.

- Winter Deficits –
 - ❑ Irrigation Water Storage is not produced.
 - ❑ Stream flow potential is curtailed.
 - ❑ Forage is unprotected from herbivory.
 - ❑ Soil is unprotected and dried by winds.
 - ❑ Stock water is used harder and less replenished.
 - ❑ Shrub and tree productivity drops.

- Spring Deficits –
 - ❑ Range Forage Yields are reduced and delayed.
 - ❑ Stock water is depleted or non-existent.
 - ❑ Feed bills expand.
 - ❑ Weeds and water monger species establish.

- Summer Deficits –
 - ❑ Forage quality and quantity are subdued.
 - ❑ Stock water is depleted or non-existent.
 - ❑ Weed species propagate.
 - ❑ Erosion is initiated.
 - ❑ Livestock have low net productivity.

- Fall Deficits –
 - ❑ Plants lack carbohydrate reserves to overwinter well.
 - ❑ Animals lack finish.
 - ❑ Weeds flourish.
 - ❑ Grass tiller development is held back.
 - ❑ Erosion continues.

- Multi-year Deficits –
 - ❖ Deficit gets deeper.
 - ❖ Resources get shorter.
 - ❖ Managers use resources harder.
 - ❖ Operational viability shrinks.
 - ❖ Plant communities are disrupted and have reduced productivity.
 - ❖ Animals lose productivity and finish.
 - ❖ Compounding elements of poisoning, fires, and public complaints add to the headaches.
 - ❖ If multi-state, availability of alternatives is small.

OPERATIONAL DYNAMICS AND FLEXIBILITY

So if drought is a common event, why do some operations survive them better than others? Different types of operations have varying degrees of flexibility that allows them to shift and adjust to drought conditions keeping their net income as positive as possible.

- Cow/Calf Operations – These operations are fairly low in flexibility because of the gestation, lactation, and weaning cycles necessary to capture a return from their product. They are also fairly high maintenance enterprises with more labor and more vulnerability to impacts. Options for dealing drought may include:
 - ❑ Early weaning
 - ❑ Culling open, old, and low productivity cattle.
 - ❑ Not keeping replacements during drought.

- Cow/Calf/Yearling Operations – These operations have more options than cow/calf and a little less maintenance overhead on a per head basis. Their options for cutting costs during drought include:
 - ❑ Early weaning.
 - ❑ Selling Calves in Fall.
 - ❑ Sell short yearlings in late winter or spring.
 - ❑ Sell long yearlings earlier in the summer.
 - ❑ Cull open, old, and low productivity cattle.
 - ❑ Do not keep replacement cattle during drought.

- Yearling and Stocker Operations – These operations have a lot of flexibility and lower maintenance but also fall prey to rapid variations in markets and hence, dramatic variations in net returns. Some of the options used to deal with drought are:
 - ❑ Stock heavily when stored feed is already on site.
 - ❑ Stock heavily when forage is available (low deficit periods)
 - ❑ Reduce numbers when deficit of forage and water is worst.
 - ❑ Seek alternative feed supplies.

STOCKING APPROACH AND NET RETURNS

Since drought is a common event, the approach that livestock producers utilize to estimate and stock their landscapes has much to do with the reliability of their net returns on operations. A 100-year study of drought impacts on livestock operations in Australia had three basic conclusions that provide some insight into stocking mentality and economic returns:

- Producers who optimistically stock their rangelands for “good” years and feed in the deficit years have the lowest net returns and the highest variance in net returns.

- Producers who de-stock in deficit years as soon as possible, have more net returns and less variance in the returns.

- Producers who stock conservatively have the lowest variance in net returns, but fail to capture “bumper crop” returns from excellent forage production years.

PLANNING FOR DROUGHT

Planning for drought requires an alert monitoring attitude and an understanding that drought deficits in various seasons require Decision Points for action. Here are some concepts for planning:

1. During Winter Deficit: you will have less hay left, less irrigated pasture grazing and will need to cull or sell any stock above available resources.

2. Spring Deficit (Decision Point): You will have less range forage and stock water. You either need fewer animals, a shorter season, or additional water and alternative grazing resources.

3. Summer Deficit: Forage quality will be reduced. Your gains will be reduced. You will need additional water and possibly feed supplements.

4. Fall Deficits: Your grass production for next year will be reduced. Turn out will be later in the spring. Consider other forage sources or de-stocking.

BASIC GRAZING MANAGEMENT RULES

- Turn Out – Have stable forage and water available for animal maintenance and production. Wait on the forage resource. Early use of drought impaired forage can compound the negative impacts of drought. (Numbers x Time)
- Pull Off – Leave your pasture when the forage levels limit animal health or production, or when plant and/or soil integrity are at risk.
- Monitoring – Closely monitor the condition of animals, the stability of the soil, the availability of water and the stubble height of the forage. Watch for trends or shifts on the landscape such as weed infestation, pedestaling, or plant kill.
- Utilization – Use all of your resources uniformly to stretch your resources. This will require strong and close control of animal movement and timing.
- Patterns – Vary your timing and grazing pattern to maximize utilization and minimize re-use during drought.
- Infrastructure enhancements – Often it is necessary to undertake new efforts to meet the challenge of drought including some time and equipment investment:
 - ❑ Cross fence with temporary or permanent fencing.
 - ❑ Provide new water sources by piping or hauling.
 - ❑ Move salt and supplement to your corners.
 - ❑ Seek new pasture resources.
 - ❑ Provide feed supplements.
 - ❑ Consider building portable shades and wind screens to help livestock thermo-regulate.
 - ❑ Set, monitor and move cattle on pre-determined forage availability triggers.

PRODUCER MENTALITIES ABOUT HERD THINNING

When producers realize that they need to cut herd numbers they do so with a variety of mindsets based on perspective, market prices, and their interpretation of future conditions and goals.

- Some producers sell their old, cull, non-productive and low productivity animals to cut their costs and save resource availability for their most productive animals. Often this includes selling replacement heifers and hoping their brood cows can maintain the productivity level long enough to tolerate the drought and develop new replacement animals.
- Some producers expect the prices to begin dropping because of the drought-related cattle sales. Based on the hope that they can bank better returns and buy back in cheaper later they sell their premium cattle and keep their marginal stock.
- Purebred or seed stock producers who have spent long years improving herd genetics often sell the top 5% and the bottom 20% to further “super cull” their herd.
- Most producers do a little of all of these based on their forage resource availability.

No matter what options or decisions producers make it is important to assess your resources (now and future) and adjust your demand to fall within the parameters of your resources availability.

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