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A PROLONGED PERIOD OF ABNORMALLY LOW RAINFALL; AND A SHORTAGE OF WATER RESULTING FROM THIS.
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Drought Defined



FACTS ABOUT DROUGHT

- In the last 300 years, the northern Great Plains has experienced a drought every 20 years.
- The average duration of a drought is 6 years.
- There is a genuine difference between a true drought and a dry-spell that leads to low forage production.

- Run 950 registered Red Angus cows
- Implant 450 embryos in cooperater calves – producing around 225 additional calves
- Breed 400 to 475 heifers each year
- Maintain herd bulls and approximately 150 coming two-year-olds bulls thru grazing season.
- Extensive use of estrus synchronization and AI breeding on both heifer and cows.
- Our area of SD receives 19 to 23 inches of precipitation with 38 to 45 inches of snowfall on average in the Prairie Pothole region



LOW FORAGE PRODUCTION PHILOSOPHY



PREDICTING DROUGHT

- You don't know what you're in for until it happens.
- Damage assessment can take years after the drought is actually over.
- Rain events are not indicative of the end of a drought.

PERPETUAL STATE OF PREPAREDNESS

We focus on being proactive in our methods, rather than reactive, as a precaution for a low forage production year.

Our approach:

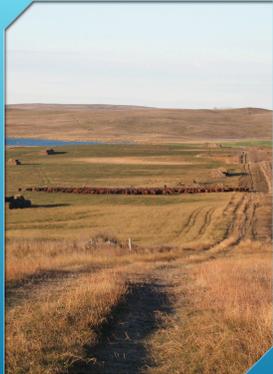
1. Using preventative measures to maintain high range conditions
2. Maintaining a limited but tightly managed inventory of roughages
3. Diversifying sources of both grazing and fed forages
4. Assessing the cost/benefit of the previous three factors

GRAZING MANAGEMENT

MAINTAINING HIGH QUALITY RANGE CONDITIONS

- Takes a focused effort in terms of:
 - Planning
 - Diversifying grazing assets
 - Assessing real-time results
 - Making adjustments to meet range condition goals
- Primary goal is to graze as long as possible without sacrificing range condition





OUR GRAZING ASSETS

- Our ranch land
- Leased privately-owned properties
- Nature Conservancy properties
- Properties managed by the US Fish and Wildlife Service
- Properties managed by SD Game, Fish, and Parks

MANAGING GRAZING ASSETS

- It takes time and effort to maintain the relationships needed to preserve access to these assets.
- Assets will inevitably need to be replaced, requiring the cultivation of new relationships and grazing assets.
- Evaluation of 'drought value' on new land opportunities is necessary for a strong portfolio.
 - What is the value of having more grazing ground in the same area as your other grazing assets?
 - Would more value be gained from opportunities to diversify location?



DIVERSIFICATION

- The type of grazing and the time of year matters.
- Grazing crop residue and cover crops is a simple but essential approach to diversification.
- Geographic diversification can be inconvenient; it is a long term strategy that can make or break your operation.
- These same strategies can be applied to any range livestock outfit.



WINTER ROUGHAGE



CUSTOM FORAGE HARVESTING

- More practical and economical
- This approach:
 - Diminishes the cost of new equipment
 - Alleviates the need for seasonal help
 - Allows us to focus on our AI breeding program



POOR QUALITY ROUGHAGE

- We purchase poor quality roughage including cornstalks, corn stover, and straw and grass hay.
- This method is cost effective to mix with by-products for cow rations during the winter months.

COST/BENEFIT ANALYSIS

- We are not afraid to make substitutions based on our analysis.
- On years like this one, we often decide to substitute on an energy basis what would otherwise be fed as roughage.
 - Normal cost of \$2 per head per day
 - Energy based cost of \$1.85 per head per day
 - $\$0.15 \times 900 \text{ cows} \times 120 \text{ days} = \$16,200$ in savings

OTHER TOOLS

HOOP BEEF SYSTEM

- We needed a way to calve at a high rate, with low calving loss and labor, in any weather.
- The system provided another forage management option.
- It gave us the ability to hold cattle longer and let our range grow during the early season.



HOOP BEEF SYSTEM

- Construction on the barns began in 2014, and was completed in early 2015.
- In 2015, we utilized the confinement system for:
 - Calving
 - Breeding
 - Weaning
- That year showed us that we could use the system for more than just calving, but also in the event of a low forage production year.

HOOP BARN IN LOW FORAGE

- We can house between 40% and 60% of our herd in the confinement system.
- This greatly reduces the expense of hauling cattle and renting new grazing assets.
- To this point, our other mitigation strategies have prevented the need to utilize the system for dry spells and instances of low forage.



"An average person can be extraordinary at this, but if don't have any guts, if you don't even try you'll be dam lucky to be ordinary."

Buck Brannaman