

# Managing Drought Risk on the Ranch

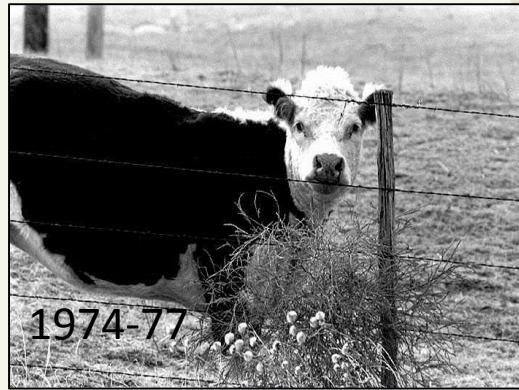
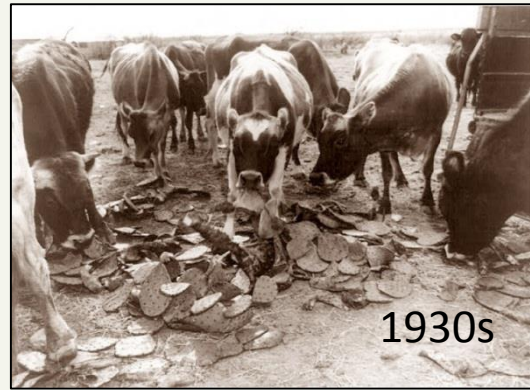
Tonya Haigh

National Drought Mitigation Center

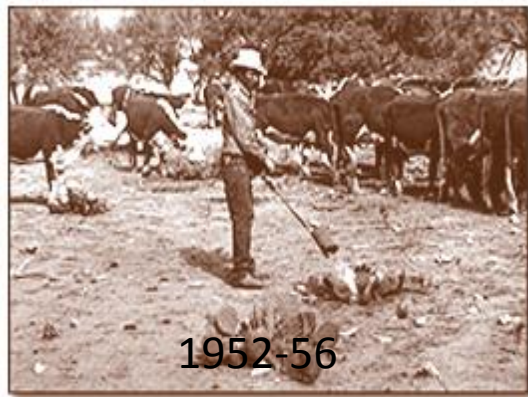
October 25, 2016



# Why Plan for drought?



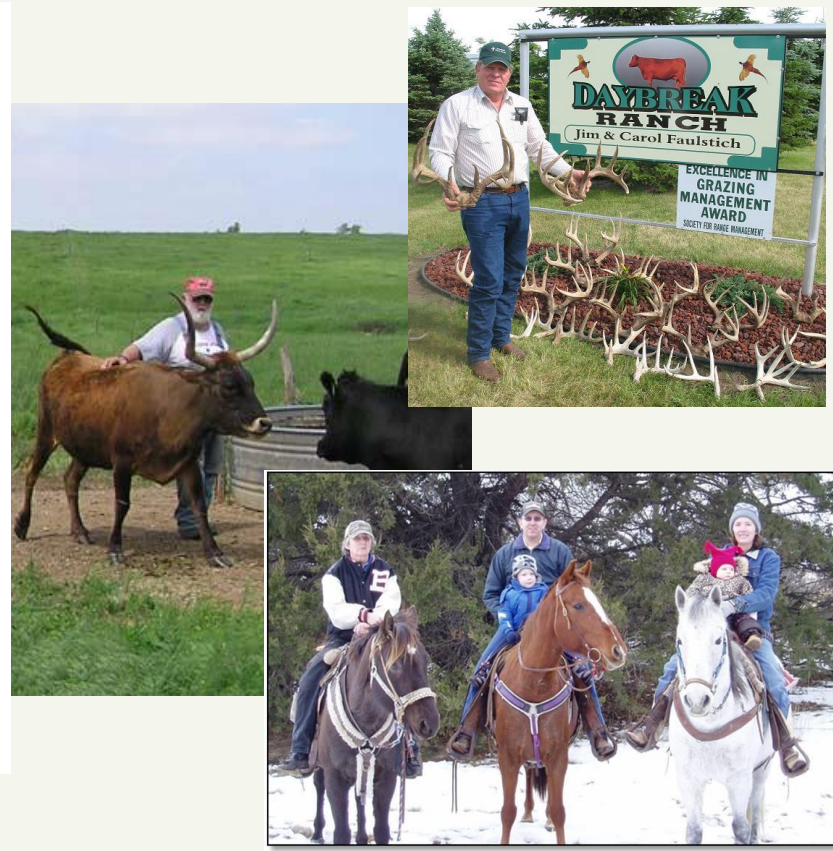
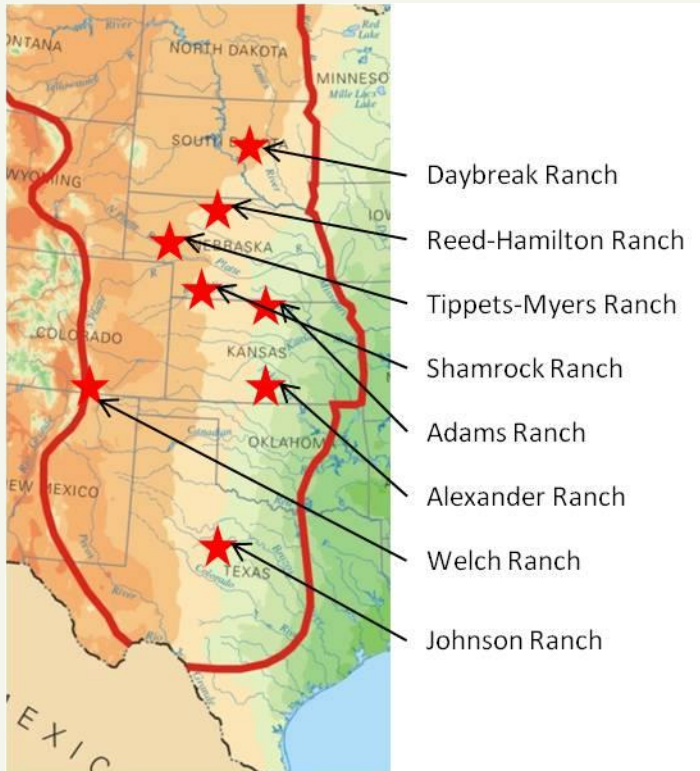
- We can't control whether or not it rains
- We can control what we do before drought, during drought, and in drought recovery
- Decisions made before and during drought affect outcomes



Baylor University, Texas Collection



# How to plan for drought?







## How some ranchers plan to manage drought

- 1) Maximize the health and flexibility of their operations before drought
- 2) Monitor the health of their resources
- 3) **Have a Plan: Implement decision-rules on critical dates when drought conditions appear**

# Which decisions need to be made?

(from Socorro NM, May 2013)

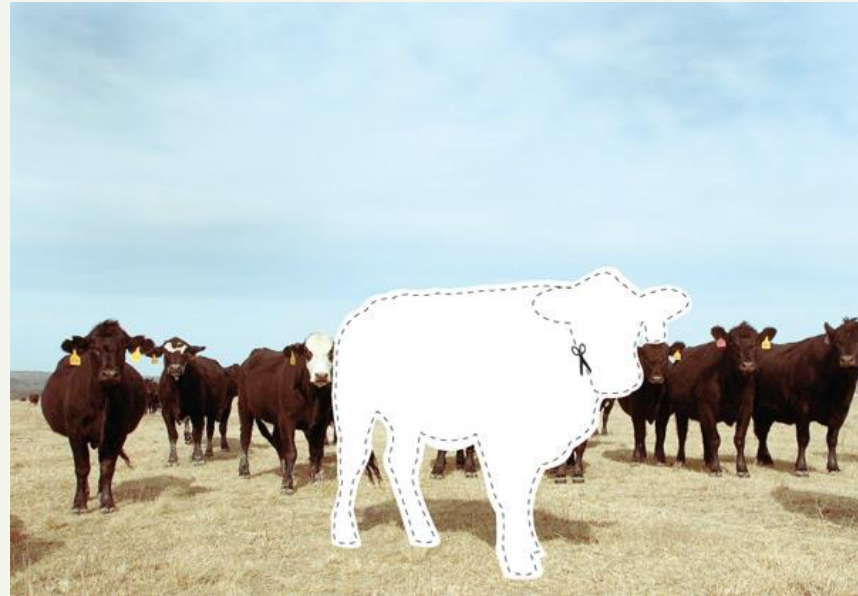
- Stocking rate decisions – number, class
- Rotation
- Marketing
- Water distribution and use
- Where to allocate \$\$ resources, personnel, labor
- What to do about neighboring ranchers, shared pasture



# What's the appropriate action to take?

## Pros & Cons

- Feed or sell? THE QUESTION
  - Cull?
    - How heavily? When?
  - Feed?
    - What? From where?
- Whether to relocate
- Early wean?
- Change rotation?
- Lease land?
- Pipe water?
- Apply for assistance?
- Explore other sources of income?



*Image: Samuel Noble Roberts Foundation*

*Appropriate action depends on severity and timing of drought, among other things*

# Management actions taken at any level of drought (SD & NE ranchers, 2012-2014)

	2012	2013	2014
Feed hay from own stockpiles	73%	68%	54%
Reduce stocker/yearling numbers (by 25% or less)	21%	21%	9%
Lease/rent/purchase additional land to graze	19%	18%	12%
Reduce stocker/yearling numbers (by more than 25%)	17%	14%	8%

# Management actions taken at more severe levels of drought (SD & NE ranchers, 2012-2014)

	2012	2013	2014
Purchase hay or feed to supplement	56%	44%	19%
Reduce breeding animal numbers (by 25% or less)	52%	42%	21%
Graze fall or winter pastures earlier than planned	51%	37%	11%
Graze cover crop, residues, or alternative forage	38%	38%	26%
Sell cull cows or feeder animals earlier than usual	67%	51%	22%



# Management actions taken at most severe levels of drought (SD & NE ranchers, 2012-2014)

	2012	2013	2014
Wean calves earlier than usual	60%	43%	17%
Reduce breeding animal numbers (by more than 25%)	22%	16%	7%
Move animals to feedlot	15%	12%	6%
Send custom grazed animals home early	12%	8%	3%

# When should decisions be made?

- Fall?
  - Culling, preg checking, weaning
  - What have we got going into winter?
- Spring?
  - Destock or rotate?
  - Can we make it to monsoon season?
- Summer
  - Branding
  - Are summer rains occurring? Enough?
- Other?
  - Depends on season of calving?
  - Deadlines for funding programs?
  - Market target dates?



*Image: Beefmagazine.com*

# The Drought Plan

- 1) What decisions need to be made?
- 2) What are the appropriate management actions?
- 3) When to make the decision?

## CRITICAL DATES

AVERAGE ANNUAL RAINFALL- 21 inches/year.

**CRITICAL DATES- April 1, June 15, August 15, & Nov 1**

### April 1

- End of the winter dormant season and the beginning of the growing season for warm season grasses
- < 4" of moisture during the winter dormant season (killing frost or Nov 1 till April 1) No prescribed burns should be conducted.
- Plan to increase the length of rest periods earlier than usual.

### June 15

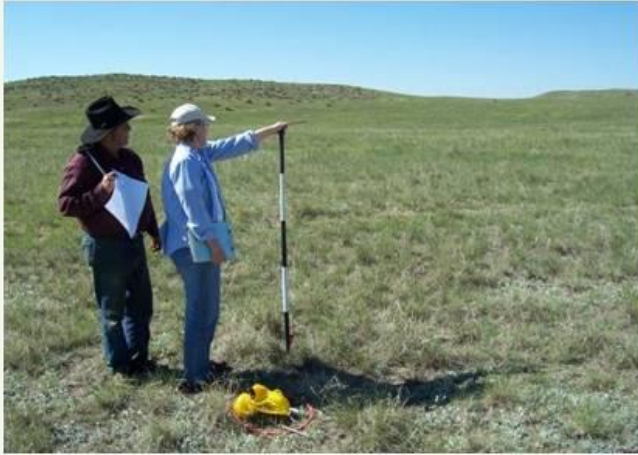
- About half of the forage is produced by June 15
- 75%(15.75") of the annual average rainfall is received between Nov 1 & June 15
- If the rainfall is <80% (12.60") of the 75% (15.75") then the stocking rate should be decreased 30% by weight. ( Finish culling herd C)
- If the rainfall is < 60%(6.30") of the 75%(15.75") then the stocking rate should be decreased 40-50% by weight (Cull herd B deep)
- The 3 weeks following June 15<sup>th</sup> is very critical. By July 15 the destocking should be completed.
- Rest periods should be as long as possible by June 1 if any indicator of a drought is present.
- Graze periods should be as long as possible to allow the other paddocks to rest for as long as possible.

### August 15

- About 90% of the annual forage has been produced. Warm season grasses are preparing for next year growing season. Rest between now & frost will benefit next year's grass production.
- Length of grazing season-Based on the rainfall in July & August
- If rainfall is <70% (1.50") of the average 5" during July & August end herd C grazing by Sept 1(Cull Deep)

### November 1

- End of the growing season and the beginning of the winter drought(drought season)
- < 80%(16.80") of the 21" average annual precipitation would indicate the beginning of a drought for the next growing season unless the winter is exceptionally wet



## Monitoring: Making decisions based on what you've got

*“I could see a steady decline over those [dry] years. And so I felt like I was more ready [to act] in 2006 than I would have been if I didn't have those records to fall back on.”*

- Many aspects to be monitored (forage, markets, water resources, animal production)
- What tools are available to help monitor? What tools would be helpful?

# Sticking to the Plan



- “...If it hadn’t rained, these cattle were going to go, and yeah, you take a loss on it. But, this has always been pretty well a fact, your first loss is your least loss. **You’ve got to make the decision.**”

Photo:

<http://www.dpi.nsw.gov.au/agriculture/livestock/beef/husbandry>



**Overview**

Drought Basics

Inventory & Monitor

Before Drought

During Drought

After Drought

Write a Plan



[Home](#) > Overview

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## Managing Drought Risk on the Ranch

Drought is a normal part of climate...it will happen again. Fortunately, there are things you can do before, during, and after drought to reduce your risk. Ranchers are increasingly implementing new ways to better prepare for and respond to drought.

The information, strategies and resources on this site are designed to provide livestock producers in the [Great Plains region](#) with information on how to incorporate management strategies to reduce the threat drought poses to livestock and forage operations.

[Download "Managing Drought Risk on the Ranch" Handbook](#)

### Managing Drought Risk on the Ranch: Great Plains Examples

#### South Dakota



[Daybreak Ranch](#)  
(Central)

#### Nebraska



[Tippets-Myers Ranch](#)  
(Western Sandhills)  
[Reed Hamilton Ranch](#)  
(Sandhills)  
[Shamrock Ranch](#)  
(Southwestern)

#### Kansas



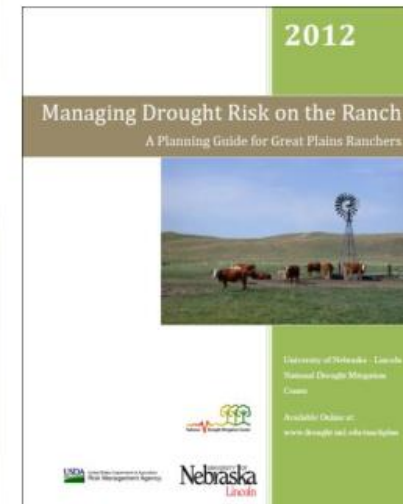
[Alexander Ranch](#)  
(South Central)  
[Adams Ranch](#)  
(North Central)

#### Colorado

[Welch Ranch](#)  
(Southern)

#### Texas

[Johnson Ranch](#)  
(West Central)



[How to use this site](#)

### Drought Conditions

[U.S. Drought Monitor](#)

[Water Year Precipitation \(Oct. 1st to present\)](#)



# Managing Drought Risk on the Ranch

## Sample Drought Plan - South Central Kansas

### Goals/Strategic Objectives

The declaration of purpose for the Alexander Ranch is to manage all integrated resources in order to maximize the production of protein, shape a harmonious existence with nature and maintain economic viability.

The strategic plan and goals for the Alexander Ranch include:

- 1. Regenerating the range while utilizing the optimum percent of forage grown.
- 2. Improve the quality and quantity of the water cycle, mineral cycle, and energy flow.
- 3. Maximize the forage utilization and flexibility.
- 4. "Ancora Imparo"(I am still learning) Continue the management education process.



Ted Alexander and son Brian

### Operation

Seasonal custom grazing with cows and calves, no haying, no tractor

### Inventory [\(see details\)](#)

- Annual Rainfall - 18-22 inches per year
- Native mixed-grass prairie

### Critical Dates

- April 1
- June 15
- August 15
- November 1

### Monitoring Plan

- precipitation - uses Davis Vantage Pro 2 which downloads data onto home computer
- forage growth - in early years used clip and dry method, now uses arazina stick and Forage Production

### Content: Sample Plans

- [Central South Dakota - Daybreak Ranch](#)
- [Nebraska Sandhills - Reed Hamilton Ranch](#)
- [Nebraska Sandhills - Tippets-Myers Ranch](#)
- [Southwest Nebraska - Shamrock Ranch](#)
- [North Central Kansas - Adams Ranch](#)
- [South Central Kansas - Alexander Ranch](#)
- [Southern Colorado - Welch Ranch](#)
- [West Texas - Johnson Ranch](#)

### Alexander Ranch Links

- [Kansas ranch wins top environmental award](#)



**WORKSHEET 4: CRITICAL DATES AND TARGET CONDITIONS**

Date \_\_\_\_\_ Form Completed by \_\_\_\_\_

Critical dates are timely monitoring points in annual management cycles. Current and predicted forage resources are the primary focus of critical dates.

Each critical date should have an action plan that clearly states target points for initiating the plan.

Target points may be based on carrying capacity of current forage or a percentage of average precipitation, i.e., 75%.

See "Identify Critical Dates and Targets" at <http://www.drought.unl.edu/ranchplan> for suggested critical dates by region.



CRITICAL DATE	TARGET CONDITION

**WORKSHEET 7: EVALUATE MANAGEMENT STRATEGIES DURING DROUGHT**

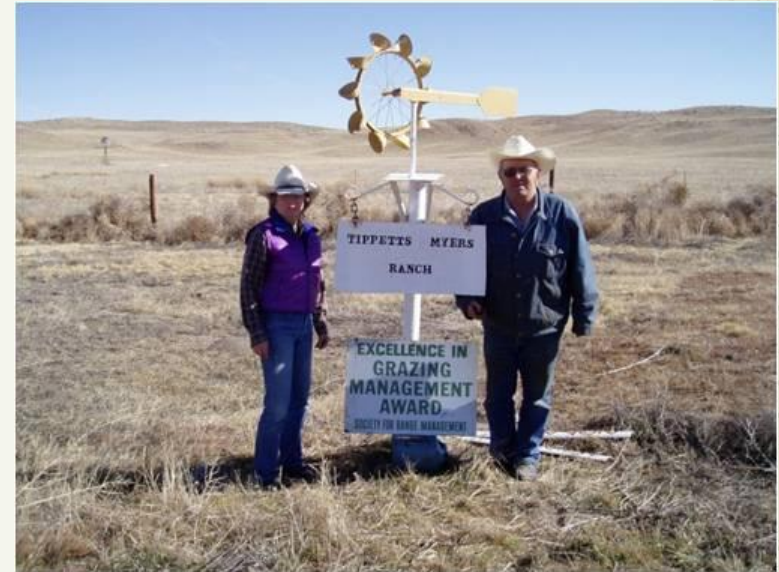
Date \_\_\_\_\_ Form Completed by \_\_\_\_\_

DROUGHT STRATEGIES	IS IT FEASIBLE?	WILL IT HAVE AN IMPACT?	WILL BENEFITS OUTWEIGH COSTS?	TO CONSIDER?
FORAGE SAVING STRATEGIES				
FINDING ALTERNATIVE FEEDS & FORAGES				
FINANCIAL STRATEGIES				
FAMILY & PEOPLE STRATEGIES				
OTHER				

<http://drought.unl.edu/ranchplan>

# Takeaway Message

- 1) Drought happens...
- 2) Some operations “weather” the drought better than others
- 3) Plan now for how to manage when drought conditions emerge



# Thank you!

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[www.drought.unl.edu/ranchplan](http://www.drought.unl.edu/ranchplan)

YouTube & Facebook: National Drought Mitigation Center

Twitter: @droughtcenter