Managing Risk on the Ranch
A Drought Planning Guide for Livestock and Forage Producers

“Here’s what my dad used to tell me. He said, if you bet on dry weather in this country, you’ll be right more than half the time”
(Nebraska Rancher 2005)

Cody Knutson
National Drought Mitigation Center
School of Natural Resources
University of Nebraska-Lincoln
Began hearing and reading that best management practices and holistic management made producers more resilient to drought

Needed more information….
Nebraska Holistic Management Study (2005)

► Mail survey and face-to-face interviews with members of the former Nebraska Holistic Management group

► Asked questions about:

  • the effects of recent drought from 2000-2004
  • strategies implemented to prepare for/respond to drought
  • drought-related needs and barriers to change

► Found wide variety of impacts and suggestions to better prepare for and respond to drought
Reported Effects of Drought from 2000 – 2005

• Cattle culling and reduced stocking rates
• Reduced grass/hay production
• Surface water/ground water quantity and quality problems
• Increased supplemental feed costs
• Crop losses
• Emotional stress
• Increased pests such as grasshoppers
• Wind erosion
• Increased irrigation
• Reduced cattle pregnancy rates
• Increased weed pressures
• Tree losses
• Hindered pasture burns
• Increased disease
What practices have you implemented to reduce the effects of drought?

<table>
<thead>
<tr>
<th>Rank</th>
<th>Practices Implemented</th>
<th>Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Reduce cattle numbers (culling, early weaning, heifers, feedlots)</td>
<td>35</td>
</tr>
<tr>
<td>2</td>
<td>Grazing management (rotational and modified grazing, leasing)</td>
<td>30</td>
</tr>
<tr>
<td>3</td>
<td>Forage production and supplemental feed (interseeding, crop grazing, hay, distillers grain)</td>
<td>28</td>
</tr>
<tr>
<td>4</td>
<td>Developed new water sources - EQIP</td>
<td>15</td>
</tr>
<tr>
<td>5</td>
<td>Financial and management strategies (reduced inputs, record keeping, other income)</td>
<td>8</td>
</tr>
<tr>
<td>6</td>
<td>Prepared a drought plan</td>
<td>8</td>
</tr>
</tbody>
</table>

Some best management practices and others specifically for drought.
Ted Alexander

• Rancher in south-central Kansas

• Working with NRCS and university researchers to improve ranch management over the last 20 years

• Including development of long- and short term drought plans

• Long-term: make ranch resilient to drought (prescribed burning, rotational grazing, water distribution, stockers)

• Short-term: identifying critical condition, dates and actions

Average Annual Rainfall – 21 inches/yr
Critical Dates – April 1, June 15, August 15, and Nov. 1

April 1
• beginning of the grass growing season
• If less than 4” of moisture during winter season - limit prescribed burns

June 15
• Half of the forage has been produced
• 75% of the annual average rainfall has been received
• If rainfall is < 80% of the 75%, decrease stocking rate 30%
• If < 60% is received by July 15, decrease stocking rate 40-50%
• Graze/rest periods should be as long as possible by June 1 if drought is present

August 15
• Length of the grazing season (based on rainfall in July and August)
• If rainfall is < 70% of the 5” July-August average, grazing period ends Sept. 1

November 1
• End of the growing season
• Less than 80% of the 21” average indicates drought for the next growing season
What are the barriers that limit your ability to prepare for drought?

<table>
<thead>
<tr>
<th>Rank</th>
<th>Possible Barriers</th>
<th>N</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Lack of capital to modify operation</td>
<td>69</td>
<td>3.1</td>
</tr>
<tr>
<td>2</td>
<td>Market/need to maximize production</td>
<td>48</td>
<td>3.0</td>
</tr>
<tr>
<td>3</td>
<td>Landlord control over your operation</td>
<td>40</td>
<td>2.4</td>
</tr>
<tr>
<td>4</td>
<td>Lack of drought planning knowledge</td>
<td>60</td>
<td>2.3</td>
</tr>
<tr>
<td>5</td>
<td>Federal farm programs</td>
<td>51</td>
<td>2.3</td>
</tr>
<tr>
<td>6</td>
<td>Unreliability of weather data and forecasts</td>
<td>64</td>
<td>2.1</td>
</tr>
<tr>
<td>7</td>
<td>Feel that nothing can be done about drought</td>
<td>60</td>
<td>2.1</td>
</tr>
<tr>
<td>8</td>
<td>Bank control over your operation</td>
<td>47</td>
<td>2.1</td>
</tr>
<tr>
<td>9</td>
<td>Peer Pressure</td>
<td>40</td>
<td>1.6</td>
</tr>
<tr>
<td>10</td>
<td>Lack of access to weather/forecast sources</td>
<td>52</td>
<td>1.3</td>
</tr>
</tbody>
</table>
## Rancher Thoughts on How to Overcome Barriers

<table>
<thead>
<tr>
<th>Rank</th>
<th>Suggested Ideas from Interviews</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Expanded or more effective assistance and insurance programs (more cost-share, allow grazing of CRP, reduced paperwork, more insurance products and proactive assistance, and tax breaks)</td>
<td>15</td>
</tr>
<tr>
<td>2</td>
<td>More education on sustainability and grazing management</td>
<td>8</td>
</tr>
<tr>
<td>3</td>
<td>Involve producers in planning/get people to plan on their own</td>
<td>6</td>
</tr>
<tr>
<td>4</td>
<td>Stop farm and ranch subsidies</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>More interstate and intra-university collaboration</td>
<td>2</td>
</tr>
</tbody>
</table>

**Assistance – Education – Collaboration – Personal Responsibility**
Managing Risk on the Ranch
A guide to help better prepare for and manage drought

Project initiated in 2006

**Project Goals:** Develop a model drought planning process and web-based educational delivery system for livestock and forage producers

**Collaborators:** National Drought Mitigation Center, University of Nebraska-Lincoln, South Dakota State University, and Texas A&M-Kingsville

Available for review in the Fall of 2009 and release to the general public in the Fall of 2010
Project Collaborators

PI: Cody Knutson, Water Resources/Social Scientist
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Dick Clark, Agricultural Economist, Retired UNL
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Terry Klopfenstein, Ruminant Nutrition, Retired UNL
Rick Rasby, Beef Specialist, Animal Science, UNL
Current “Buffet” Website Approach

Ranchers pick-and-choose from a list of information.
**Project Goal:** Incorporate this type of information into a drought planning process and training website.

- Previous Studies
- Existing Websites
- Planning Processes
- Planning Guides
- Individual Plans
- Rancher Testimonials

**Drought Planning Website**
Ranching for Profit: Planning for Drought

Dave Pratt, Ranch Management Consultants, Inc.
http://www.foothill.net/~ringram/drought.htm

• Develop and maintain a drought resistant ecological state
• Cross-fence to control where/when livestock graze to increase density
• Develop a long-term water supply
• Have enterprises that are compatible with drought risk
• Have a de-stocking plan in writing
• Know and act on your critical dates
• Never, ever drought feed
• Put yourself in control of your finances
• Have financial reserves
• Beware of “free” money
• Have a positive attitude about drought
Published Drought Planning Guide

Drought Management on Range and Pastureland: A Handbook for Nebraska and South Dakota

Pat Reece, Jack Alexander, and James Johnson (1991) Lincoln, NE: University of Nebraska-Lincoln Cooperative Extension Division

I. Plant Responses to Drought
II. Management Preparation For Drought
III. Herd Management
IV. Animal Responses to Drought
V. Predicting Forage Production and Stocking Rates
VI. Drought Management Plans
VII. Rangeland Resource Inventory
VIII. Grazing Management
IX. Plant Recovery After Drought
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He said, if you bet on dry weather in this country,
you'll be right more than half the time"
--Nebraska rancher, 2006

Managing Risk on the Ranch

- Drought is a normal part of climate...it will happen again.

- There are things you can do before, during, and after drought to reduce your risk.

- You should have both a long-term management plan and a drought response plan, with trigger dates.

- The goal of this website is to help you become more resilient to hazards such as drought.

Producers manage for things they can control and things they can't; for conditions that persist and those that change seasonally. All regions are prone to some form of extreme weather events such as thunderstorms, blizzards and drought. These extremes and every day distractions make it critical to use effective planning processes to effectively manage environmental risk.

Drought is one hazard that affects every portion of the United States sooner or later, and producers are increasingly implementing new ways to better prepare and respond to it.

The information, strategies and resources on this site are designed to provide producers with information on how to incorporate management strategies to reduce the threat drought poses to livestock and forage operations.
Drought Basics - Introduction

The objective of this section is to describe how drought impacts your ranching operation.

This section can help you answer questions such as:

- **Planning**
  Why Should I Plan for Drought?

- **Weather & Drought**
  What is Drought?
  How Do We Monitor Drought?
  How Do We Prepare for Drought?

- **Livestock & Drought**
  How Does Drought Affect Livestock Nutrition and Gain?
  When Should I Worry about Heat Stress or Dehydration?

- **Grasses & Drought**
  How Does Drought Impact Grasses (Quick Facts)?
  Why is Soil Moiture Important to Plant Growth?
  Will Limited Plant Growth This Year Hurt Next Year's Growth?

- **Grazing & Drought**
  How Do Grazing & Drought Interact (Quick Facts)?
  Do Diverse Pastures Hold Up Better During Drought?
  If I Grazed Too Hard Last Year, Why is There Less Grass This Year?
Managing Risk on the Ranch

Before a Drought

What to do Before a Drought

This section contains information about steps you should consider before a drought.

The first step is to develop and implement a plan that maximizes the overall health, resilience, and productivity of your ranch operation.

Healthy systems are better able to tolerate drought. Incorporating the likelihood of periodic drought into your overall ranch plan and grazing strategy will increase the likelihood that your pastures, livestock, finances, and family will successfully make it through the next one.

Here you will find tools to help you identify best management practices for your operation, implement monitoring that will help you make effective decisions, and improve your overall drought resiliency.

- **Grazing Strategy**
  - Developing a Grazing Strategy
  - Livestock Management & Production Objectives
  - Pasture Objectives & Plant Resources
  - Grazing Pressure & Stocking Rates

- **Grazing Systems**
  - Introduction to Grazing Systems
  - Season-long Continuous Grazing
  - Rotation Grazing Alternatives

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Do you have a ranch plan and evaluation process?

Using the Balanced Scorecard for Ranch Planning & Management: Setting Strategy & Measuring Performance by Barry Dunn

Holistic Management - A Whole Farm Decision-Making Framework by ATTRA National Sustainable Agriculture Information Center
What to Do During a Drought

This section contains information about steps you should consider during a drought. Topics include drought monitoring, grazing management, supplemental feeding, de-stocking, and financial options.

- Monitoring During Drought
  Monitoring Range Condition
  Monitoring Weather

- Grazing Management
  Grazing Management During Drought

- Supplemental Feeding
  Introduction
  High-Grain Rations
  Alternative Forages
  Testing for Toxins
  Hay-Exchange Links

- De-Stocking
  De-Stocking
  Culling & Early Weaning

- Financial Options
Managing Risk on the Ranch

After a Drought

WHAT TO DO AFTER A DROUGHT

This section contains information about steps you should consider after a drought. Topics include grass recovery, re-stocking, and financial options.

- Grass Recovery
- Re-Stocking
- Financial Options

Short-term Drought
Prolonged Drought

Related Links

Could place links to external sites here.

Or add a testimonial or other picture
CONTACTS & RESOURCES

The Contacts and Resources section of this website contains information about how you can ask an expert or hire a consultant. This section also contains testimonials, presentations, a reference section and a user discussion area.

Related Links
Could place links to external sites here.
Or add a testimonial or other picture
Ranch Planning Project Next Steps

• Work on the website

• Conduct interviews with ranch managers and advisors about their drought planning experiences
  - North Dakota, South Dakota, Nebraska, Wyoming, Kansas, Texas, Nevada, California

• Hold a drought planning workshop in late September in Lincoln, NE

• Have a working draft of the website this Fall

• Go public next year
Thank You!

Please consider reviewing the website.

Any suggestions or comments are appreciated!

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