Understanding Risk Management Programs for Forage Production

Monte Vandeveer, UNL Extension Educator

Forage Production is Highly Variable

- 2012 one of the worst years, 2014 one of the best
  - Best and Worst Two Years Apart?
- Managing a grazing system involves huge uncertainty
- What tools can help manage this?

Insurance and disaster payments for forage production

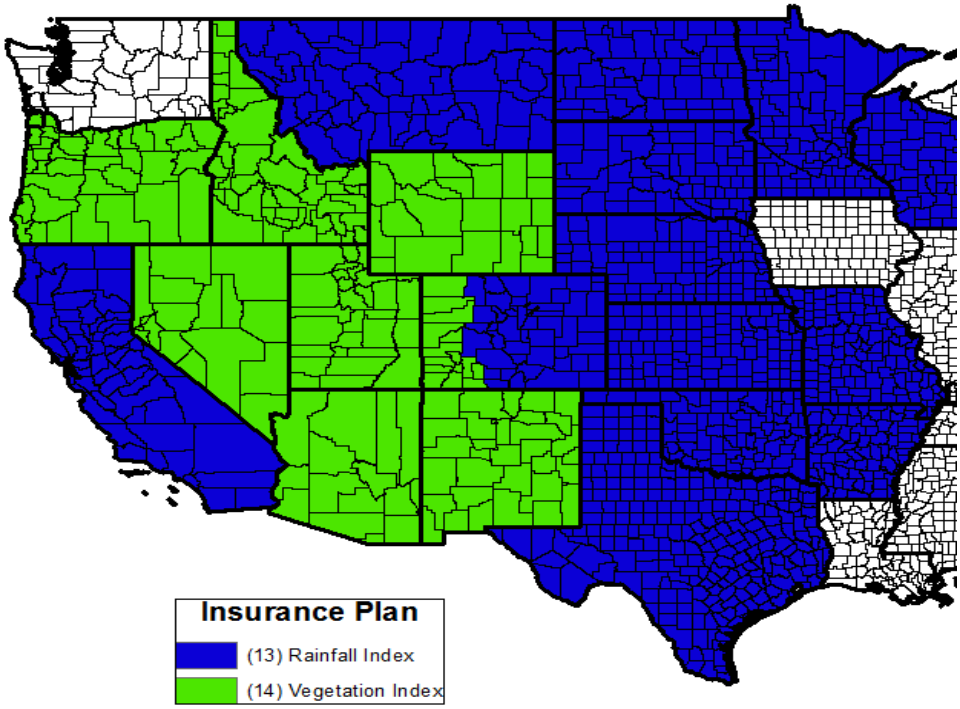
- Pasture, Rangeland, and Forage (PRF) insurance
  - Sold through private insurance agents
  - Still a pilot program with RMA
  - Available in Nebraska since 2009
- Livestock Forage Disaster Program (LFP)
  - Authorized in Agricultural Act of 2014
  - Based on drought zones of US Drought Monitor
  - Authorized for life of Farm Bill (thru 2018)

Pasture Rangeland and Forage Insurance

- PRF Insurance is an area risk management plan that can help forage/livestock producers manage for potential production losses.
- Can't insure pasture yields like we do crop yields
  - We don't measure pasture production like we measure crop production
- But… forage production is correlated with precipitation

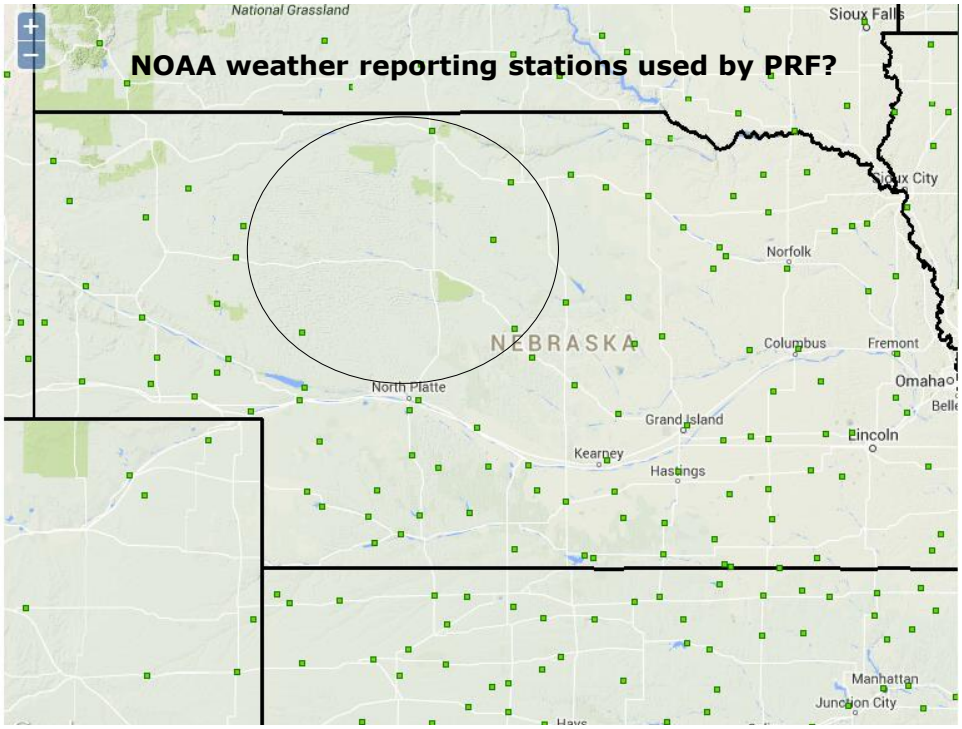
PRF: works with a rainfall index

- The Rainfall Index Plan uses data from NOAA weather stations to measure precipitation.
- This data is then compared to long term averages and is indexed to determine if there is a loss.
- Rainfall Index used in Nebraska since 2013
  - Used a vegetative index prior to that



Pasture Rangeland and Forage Insurance

- **Insurance coverage is for a <u>single peril</u> – lack of precipitation. PRF does not cover fire, hail, grasshoppers etc.**
- **Coverage is <u>area-based</u>. Rainfall at four nearest reporting stations to grid area are used to calculate the rainfall index. Index is *<u>not for an individual farm or ranch</u>* or specific weather station.**
- **An index is a ratio. If the long term average for annual precipitation for your location is 16 inches and you only got 8, your index/ratio is 50%.**



Three potential coverage gaps

- Rainfall Proxy Gap
  - Rainfall is only a proxy measure for forage production; they won't track exactly
- Area Basis Gap
  - Rainfall is measured at 4 nearest reporting stations; may not match local experience
- Perennial Production Gap
  - Pasture is a perennial production system; what happens this year also affects next year

How PRF Insurance Works in NE

- Producers identify what acres they want to insure, grid location, level of coverage, dollars of protection and time frames to cover
- Coverage must be purchased by November 15.
- Precipitation is tracked by NOAA and compared to long term data.
- Producers will be paid an indemnity if precipitation index values fall below the insured level of coverage.

EXAMPLE:

Custer County Diversified Farm/Ranch

- 2,500 Acres Rangeland/Pasture
- 250 Acres Alfalfa/Grass Hay
- Looking at 1980-2013 (34 years)

- Use the RMA Decision Support Tool

USDA Risk Management Agency
United States Department of Agriculture

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You are: Home / Crop Policies and Pilots / Pasture, Rangeland, Forage

Popular Topics

- Appendix III/M-13
- Bulletins and Handbooks
- Crop Policies and Pilots
- Federal Crop Insurance Corp
- Field Offices: ROs | COs
- Frequently Asked Questions
- Information Browser
- Laws and Regulations
- Livestock Policies
- Reinsurance Agreements

Pasture, Rangeland, Forage

Pasture, Rangeland, and forages cover approximately 55 percent of all U.S. land. Forage grows differently in different areas, so it's important for farmers and ranchers to know which types and techniques work best for their region. The following insurance programs for pasture, rangeland, and forage (PRF) utilize various indexing systems to determine conditions. Also see livestock policies or PRF NAP Table.

PRF Archive

New

- USDA Encourages Farmers and Ranchers to Take Advantage of Safety Net Tools for Livestock Operations
- Pasture, Rangeland, Forage Pilot Insurance Program Fact Sheet
- Summary Overview of Rainfall Index Insurance plan for Pasture, Rangeland, and Forage
- Summary Overview of Vegetation Insurance Plan for Pasture, Rangeland, and Forage
- Pasture, Rangeland, Forage FAQs
- Rainfall Index and Vegetation Index Pasture, Rangeland, and Forage General Program Overview
- Rainfall Index Pasture, Rangeland, and Forage Technology
- Vegetation Index Pasture, Rangeland, and Forage Technology
- Rainfall Index and Vegetation Index Pasture, Rangeland, and Forage Shares
- Rainfall Index and Vegetation Index Pasture, Rangeland, and Forage Tools

Rainfall Index (RI) - is based on weather data collected and maintained by NOAA's Climate Prediction Center. The index reflects how much precipitation is received relative to the long-term average for a specified area and timeframe.

- County Availability (PDF): Map | Text
- Basic Provisions (PDF) See mandatory Ineligibility Amendment, Farm Bill Amendment, and footnotes.
  - Ineligibility Amendment (15-Ineligibility)
  - Farm Bill Amendment (15-RIVI-Farm Bill)
- Policy Provisions (PDF)
- ~~Insurance Standards Handbook (PDF) (Revised Apr 2013)~~
- Grid ID Locator, Decision Support Tool, Historical Indices

http://www.rma.usda.gov/policies/pasturerangeforage/

Grid Locator
Pasture, Rangeland, Forage

Find a Location: Search

Vegetation | Rainfall

Current Location

Grid ID:
Latitude:
Longitude:
County:
State:
Address:

Grid Tools:

- Decision Support Tool
- Historical Rainfall Indices
- View Actuarial Info
- View Cost Estimator

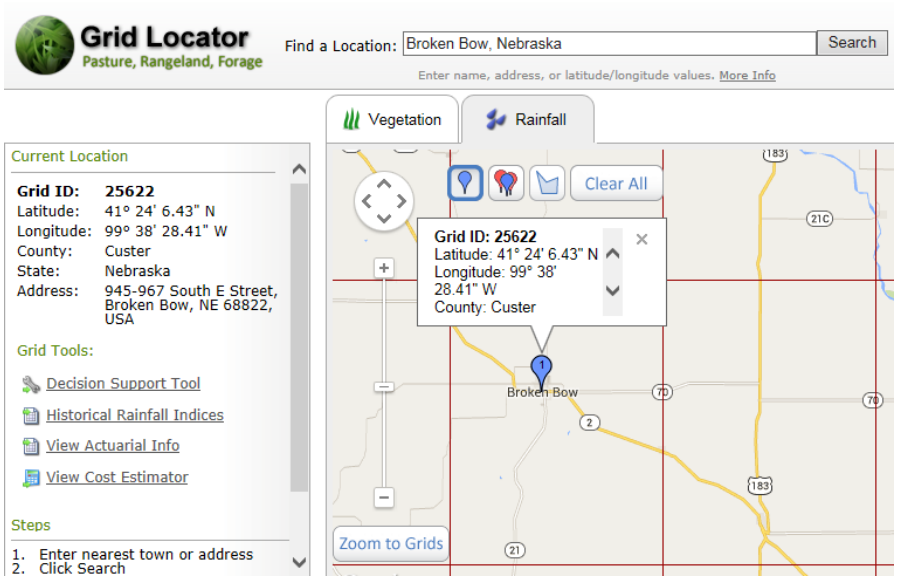
Steps

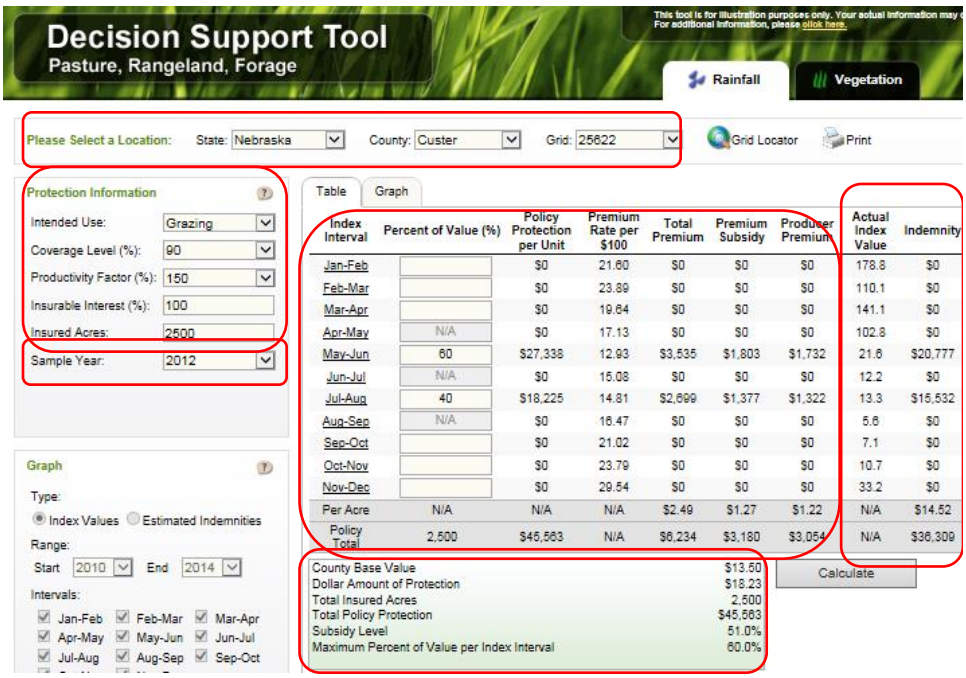
1. Enter nearest town or address
2. Click Search
3. Navigate to property
4. Click a point on property
5. Print view for records
6. Note the Grid ID
7. Choose grid tool to view data

Clear All | Zoom to Grids

Map data ©2012 Google

http://maps.agforceusa.com/prf/ri





Index Interval	Percent of Value (%)	Policy Protection per Unit	Premium Rate per $100	Total Premium	Premium Subsidy	Producer Premium	Actual Index Value	Indemnity
Jan-Feb		$0	21.60	$0	$0	$0	178.8	$0
Feb-Mar		$0	23.89	$0	$0	$0	110.1	$0
Mar-Apr		$0	19.64	$0	$0	$0	141.1	$0
Apr-May	N/A	$0	17.13	$0	$0	$0	102.8	$0
May-Jun	60	$27,338	12.93	$3,535	$1,803	$1,732	21.6	$20,777
Jun-Jul	N/A	$0	15.08	$0	$0	$0	12.2	$0
Jul-Aug	40	$18,225	14.81	$2,699	$1,377	$1,322	13.3	$15,532
Aug-Sep	N/A	$0	16.47	$0	$0	$0	5.6	$0
Sep-Oct		$0	21.02	$0	$0	$0	7.1	$0
Oct-Nov		$0	23.79	$0	$0	$0	10.7	$0
Nov-Dec		$0	29.54	$0	$0	$0	33.2	$0
Per Acre	N/A	N/A	N/A	$2.49	$1.27	$1.22	N/A	$14.52
Policy Total	2,500	$45,563	N/A	$6,234	$3,180	$3,054	N/A	$36,309

http://prf.agforceusa.com/ri

Protection Information

Intended Use:	Grazing
Coverage Level (%):	90
Productivity Factor (%):	150
Insurable Interest (%):	100
Insured Acres:	2500
Sample Year:	2012

Intended Use:
- **haying or grazing**

Coverage Level:
- **90% to 70%**

Productivity Factor:
- **60% to 150%**

Insurable interest:
- **100% = full ownership**

County Base Value	$13.50
Dollar Amount of Protection	$18.23
Total Insured Acres	2,500
Total Policy Protection	$45,563
Subsidy Level	51.0%
Maximum Percent of Value per Index Interval	60.0%

County Base Value =
base dollars of coverage per acre; set by RMA

Dollar Amount of Protection =
County Base Value x Productivity Factor %
x Coverage Level %

Total Policy Protection =
$ Amount of Protection x Total Insured Acres

Index Interval	Percent of Value (%)
Jan-Feb	
Feb-Mar	
Mar-Apr	
Apr-May	N/A
May-Jun	60
Jun-Jul	N/A
Jul-Aug	40
Aug-Sep	N/A
Sep-Oct	
Oct-Nov	
Nov-Dec	

INDEX INTERVALS

- **Time periods for which you insure rainfall**
- **Must choose at least two intervals**
- **Must allocate % of coverage to each (max 60%, min 10%)**

CHOOSE PERIODS WHICH ARE KEY FOR PRODUCTION

When does Precipitation Impact Forage Production?

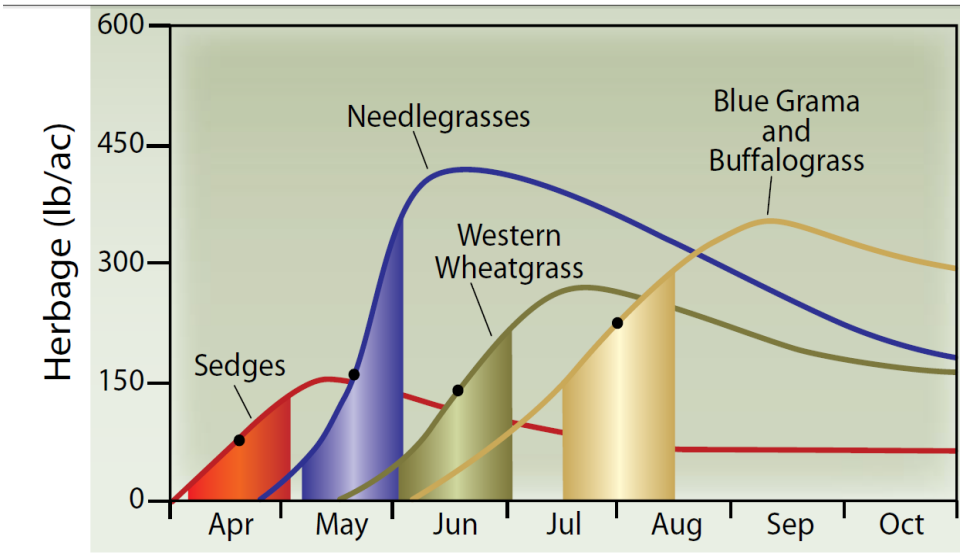


Figure 8. Seasonal distribution of plant growth (lines) and midpoints (●) of rapid-growth windows (shaded areas) for key species on a limy upland range site in western Nebraska.

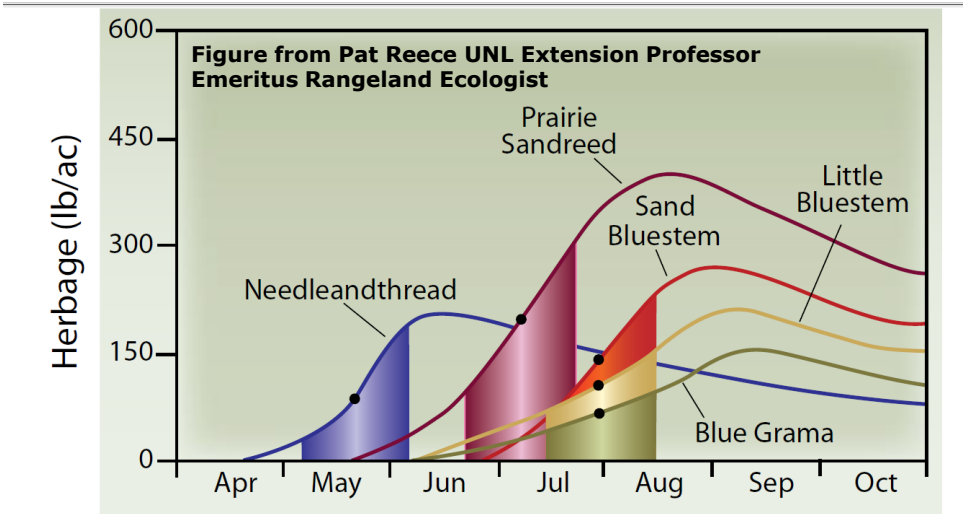


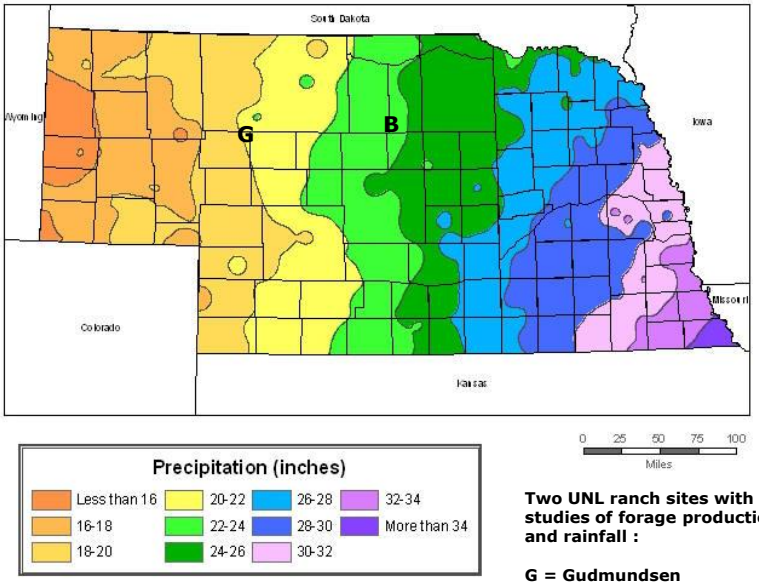
Figure 9. Seasonal distribution of plant growth (lines) and midpoints (●) of rapid-growth windows (shaded areas) for key species on a sands range site in western Nebraska.

Forage production and weather data available for 2 ranches managed by UNL

- Gudmundsen Sandhills Laboratory
  - Weather data back to 1987
  - Forage production back to 2004
- Barta Brothers Ranch
  - Weather data back to 1997
  - Forage production back to 1999

- Also have details on pasture/forage composition

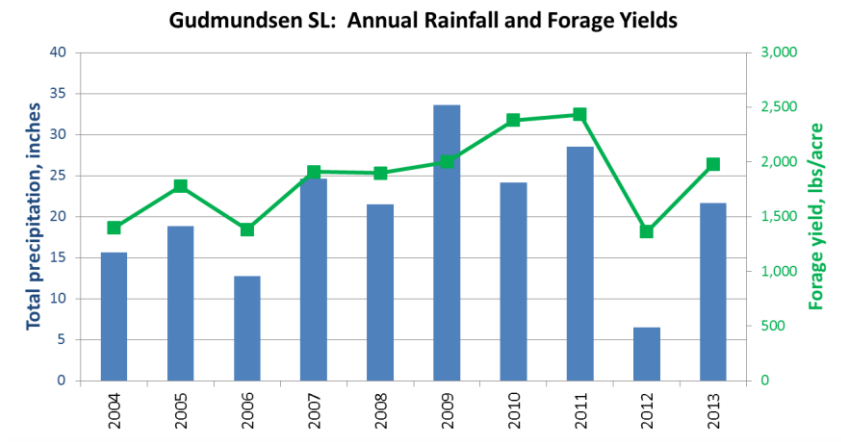
Average Annual Precipitation, 1971-2000
Nebraska



Two UNL ranch sites with studies of forage production and rainfall :

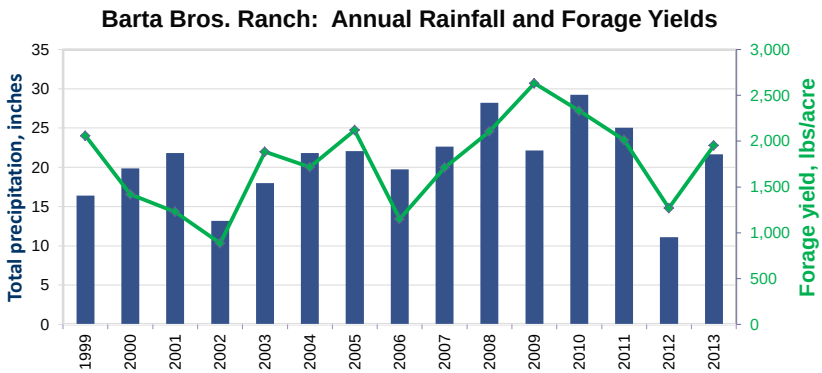
G = Gudmundsen
B = Barta Brothers

How does forage output track with annual rain?



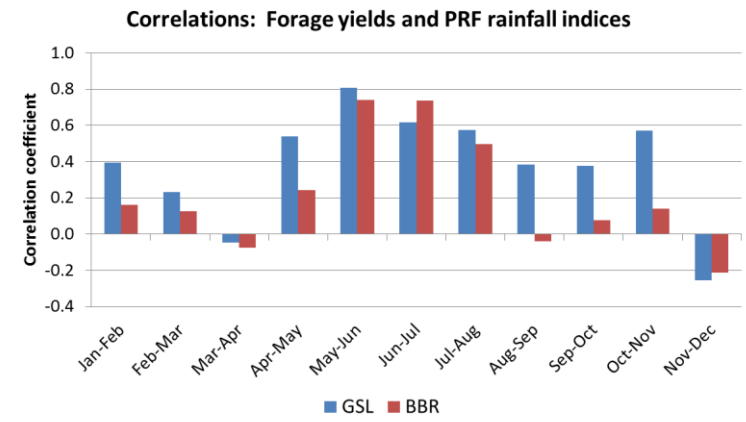
Average annual rainfall: 20.8 inches
Average annual forage yield: 1,853 lbs
Simple correlation: 0.804

How does forage output track with annual rainfall?



Average annual rainfall: 20.9 inches
Average annual forage yield: 1,765 lbs
Simple correlation: 0.608

How well do ranch forage yields track with PRF rainfall indices?



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Jan-Feb		$0	21.60	$0	$0	$0
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May-Jun	60	$27,338	12.93	$3,535	$1,803	$1,732
Jun-Jul	N/A	$0	15.08	$0	$0	$0
Jul-Aug	40	$18,225	14.81	$2,699	$1,377	$1,322
Aug-Sep	N/A	$0	16.47	$0	$0	$0
Sep-Oct		$0	21.02	$0	$0	$0
Oct-Nov		$0	23.79	$0	$0	$0
Nov-Dec		$0	29.54	$0	$0	$0
Per Acre	N/A	N/A	N/A	$2.49	$1.27	$1.22
Policy Total	2,500	$45,563	N/A	$6,234	$3,180	$3,054

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Apr-May	N/A	$0	102.8	$0
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Jun-Jul	N/A	$0	12.2	$0
Jul-Aug	40	$18,225	13.3	$15,532
Aug-Sep	N/A	$0	5.6	$0
Sep-Oct		$0	7.1	$0
Oct-Nov		$0	10.7	$0
Nov-Dec		$0	33.2	$0
Per Acre	N/A	N/A	N/A	$14.52
Policy Total	2,500	$45,563	N/A	$36,309

RESULTS FOR 2012

Coverage level = 90%

May-Jun:
Actual Index = 21.6

Payment Factor =

$$\frac{(90 - 21.6)}{90} = .7600$$

Indemnity =
Payment Factor x
$ Policy Protection

= .7600 x $27,338
= $20,777

Opportunity to Insure Perennial Hay Meadows and Alfalfa

- Perennial hay crops can be insured
- Winter feed is critical to many operations
- PRF insurance helps compensate for loss

Protection Information

Intended Use:	Haying
Coverage Level (%):	90
Productivity Factor (%):	150
Insurable Interest (%):	100
Insured Acres:	250
Sample Year:	2012

County Base Value	$284.08
Dollar Amount of Protection	$383.51
Total Insured Acres	250
Total Policy Protection	$95,878
Subsidy Level	51.0%
Maximum Percent of Value per Index Interval	60.0%

Index Interval	Percent of Value (%)	Policy Protection per Unit	Premium Rate per $100	Total Premium	Premium Subsidy	Producer Premium	Actual Index Value	Indemnity
Jan-Feb		$0	21.60	$0	$0	$0	178.8	$0
Feb-Mar		$0	23.89	$0	$0	$0	110.1	$0
Mar-Apr		$0	19.64	$0	$0	$0	141.1	$0
Apr-May	N/A	$0	17.13	$0	$0	$0	102.8	$0
May-Jun	50	$47,939	12.93	$6,199	$3,161	$3,038	21.6	$36,434
Jun-Jul	N/A	$0	15.08	$0	$0	$0	12.2	$0
Jul-Aug	50	$47,939	14.81	$7,100	$3,621	$3,479	13.3	$40,855
Aug-Sep	N/A	$0	16.47	$0	$0	$0	5.6	$0
Sep-Oct		$0	21.02	$0	$0	$0	7.1	$0
Oct-Nov		$0	23.79	$0	$0	$0	10.7	$0
Nov-Dec		$0	29.54	$0	$0	$0	33.2	$0
Per Acre	N/A	N/A	N/A	$53.19	$27.13	$26.07	N/A	$309.16
Policy Total	250	$95,878	N/A	$13,298	$6,782	$6,516	N/A	$77,289

Premiums & Indemnities for 2012

- Total Premiums $9,570
  - Grazing $3,054
  - Haying $6,516
- Total Indemnities $113,598
  - Grazing $36,309
  - Haying $77,289
- Net of $104,028

Experience over 1980-2013

90% Coverage, 150% Productivity

- Paid 20 out of 34 years
- Annual Premium = $9,570
- Average Annual Indemnity = $18,679
- $1.95 received for every $1 spent

Experience over 1980-2013

80% Coverage, 150% Productivity

- Paid 15 out of 34 years
- Annual Premium = $5,933
- Average Annual Indemnity = $13,350
- $2.25 received for every $1 spent

Experience over 1980-2013

70% Coverage, 150% Productivity

- Paid 15 out of 34 years
- Annual Premium = $3,201
- Average Annual Indemnity = $8,857
- $2.77 received for every $1 spent

Things to Evaluate

- Risk Management Tool? Precipitation = Forage
- Does it Provide Opportunities & Meet Goals?
- When is Taking the Insurance Prudent?
- Use the Decision Support Tool to evaluate your options
- When, Levels of Coverage & Levels of Productivity

Questions on PRF?

2014 Farm Bill and disaster programs for livestock

- Livestock Forage Disaster Program (LFP)
  - Lost forage due to drought or fire
- Livestock Indemnity Program (LIP)
  - Death loss related to extreme weather
- Emergency Assistance for Livestock, Honey Bees, & Farm-Raised Fish Program (ELAP)
  - May cover losses not covered by other programs

http://disaster.fsa.usda.gov/

Livestock Forage Disaster Program (LFP)

- Provides retroactive compensation to cover eligible forage grazing losses due to drought or fire damages dating back to October 1, 2011
  - Signup April 15, 2014 to January 30, 2015
- Limited to $125,000 per person a year across all disaster programs
- Must have Adjusted Gross Income <$900,000

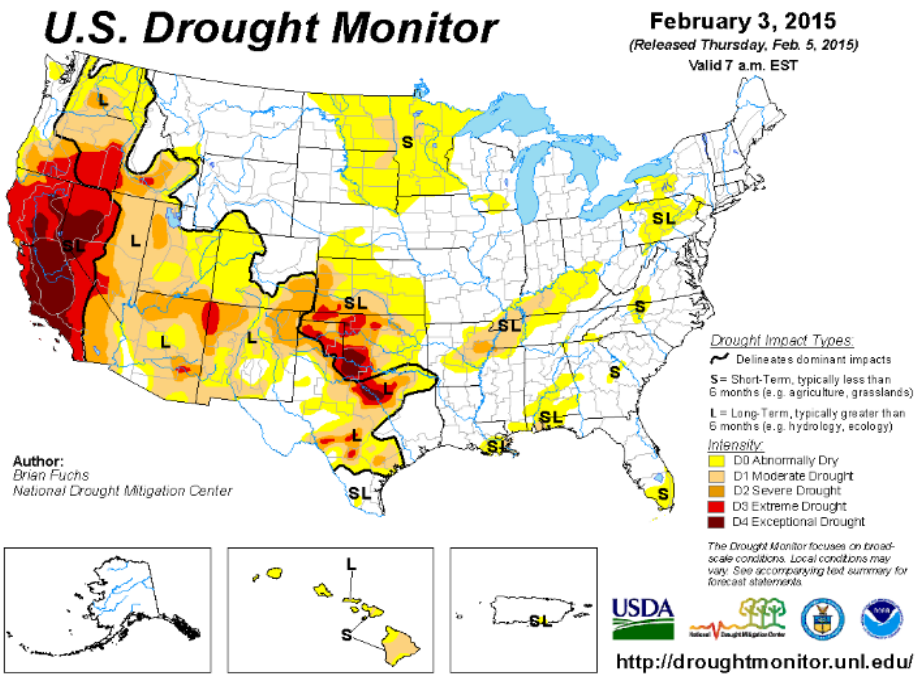
Livestock Forage Disaster Program (LFP)

- Eligible livestock covered by LFP
  - Livestock must be owned or purchased during the 60 days before the beginning date of a qualifying drought or fire
  - Sold or disposed of due to drought condition during the current production year, or one or both of the two proceeding production years
- Ineligible livestock
  - Livestock under 500 pounds
  - Livestock that were or would have been in a feedlot at the time of the disaster

LFP payments and the Drought Monitor

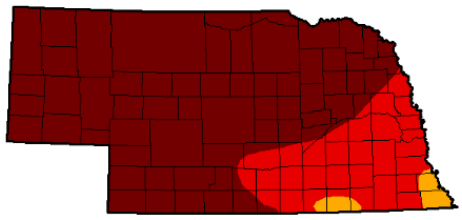
- **Drought classifications and payments:**

Classification	Qualifying drought during normal grazing season	# of Monthly Payments
D2 – Severe	8 Consecutive Weeks	1
D3 - Extreme	Anytime Any 4 Weeks	3 4
D4 -Exceptional	Anytime Any 4 Weeks	4 5



U.S. Drought Monitor

Nebraska



October 2, 2012

(Released Thursday, Oct. 4, 2012)

Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	100.00	100.00	97.94	77.61
Last Week 9/25/2012	0.00	100.00	100.00	100.00	97.94	73.25
3 Months Ago 7/3/2012	0.19	99.81	77.22	40.55	2.28	0.00
Start of Calendar Year 1/3/2012	71.68	28.32	13.81	0.65	0.00	0.00
Start of Water Year 9/25/2012	0.00	100.00	100.00	100.00	97.94	73.25
One Year Ago 10/4/2011	58.18	41.82	0.00	0.00	0.00	0.00

Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:
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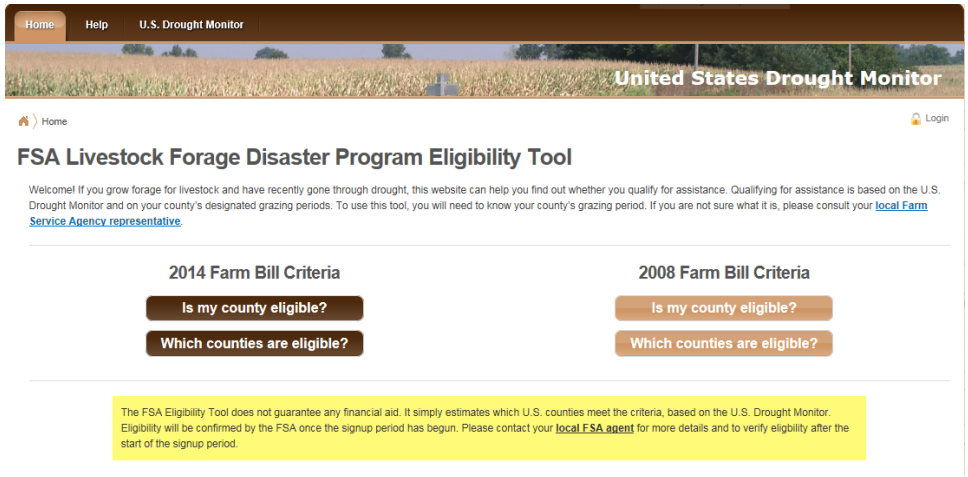
NOAA/NWS/NCEP/CPC



LFP eligibility tool, U.S. Drought Monitor

http://droughtmonitor.unl.edu/fsa/Home.aspx

LFP payment rates vary by livestock type

- **Eligible LFP livestock and payment rates:**

Kind	Type	Weight Range	Payment Rate Per Head			
			2011	2012	2013	2014
Beef	Adult	Bulls, Cows	$34.57	$51.81	$57.27	$52.56
	Non-adult	500 pounds or more	$25.93	$38.86	$42.96	$39.42
Dairy	Adult	Bulls, Cows	$89.89	$134.71	$148.90	$136.66
	Non-adult	500 pounds or more	$25.93	$38.86	$42.96	$39.42
Buffalo/Beefalo	Adult	Bulls, Cows	$34.57	$51.81	$57.27	$52.56
	Non-adult	500 pounds or more	$25.93	$38.86	$42.96	$39.42
Sheep	All		$8.64	$12.96	$14.32	$13.14
Goats	All		$8.64	$12.96	$14.32	$13.14
Deer	All		$8.64	$12.96	$14.32	$13.14
Equine	All		$25.58	$38.34	$42.38	$38.90

LFP payment calculations

- **FSA calculates LFP payments for an eligible livestock producer at 1, 3, 4, or 5 times the monthly payment rate**
- **The LFP monthly payment rate for drought is equal to 60 percent of the lesser of the monthly feed cost:**
  - **For all covered livestock owned or leased by the eligible livestock producer; or**
  - **Calculated by using the normal carrying capacity of the eligible grazing land of the eligible livestock producer**
- **Total LFP payments will not exceed five monthly payments for the same livestock**

LFP also covers livestock which had to be sold: "mitigated livestock"

- **Eligible livestock sold or otherwise disposed of due to drought conditions in one or both of the two previous production years immediately preceding the current production year**
- **Will have a payment rate equal to 80 percent of the normal monthly payment rate**

LFP payments so far & future sign-up

- **Nebraska LFP Payments**
  - **As of December 1, 2014, USDA reports a total of 43,054 LFP claims submitted which total over $512 million**
- **Signup for 2015 and beyond**
  - **The application for LFP assistance must be made within 30 days after the end of the calendar year in which the grazing loss occurred**

- Questions?
  - Comments?
    - Thanks!

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