Pasture, Rangeland, Forage Crop Insurance
Who are we?

USDA, Risk Management Agency (RMA)

- **Mission:** To promote, support, and regulate sound risk management solutions to preserve and strengthen the economic stability of America’s agricultural producers.
  - Operate and manage the Federal Crop Insurance programs.
  - For crop year 2012, RMA managed over $116 Billion worth of insurance liability.
- We merely administer the program. We do NOT sell crop insurance products. Only crop insurance agents sell.
- RMA web site: http://www.rma.usda.gov/
History

The Agricultural Risk Protection Act of 2000 (ARPA) mandates programs to cover pasture and rangeland

- Sec 522(c)(6) states: Research and Development Priorities – The corporation shall establish as one of the highest research and development priorities of the Corporation the development of a pasture, range, and forage program.
Objective

- Comply with mandate Congress included in the Act
- Assure any program implemented
  - Does not encourage poor management practices
  - Does not reward poor management practices
  - Does not impact free markets including rental rates
  - Meets the needs of the producer/ranchers
  - Meaningful coverage – loss of feed
  - Accurately correlates to losses
Challenges

1. Various plant species
2. Timing of plant growth
3. Lack of individual/industry data
4. Vast range of management practices across the industry
5. Publicly announced prices not available
6. Crop continuously harvested via livestock
7. Various livestock species and segments
Feasibility and Design

- RMA requested proposals
- All proposals submitted were a rainfall or vegetation index plan
- RMA approved 4 contracts with 3 contractors
- Resources spent were considerable
- Result – 2 contracts were implemented
Issues Encountered

- New program with new participants
- New technology
- Historically row crop/farmer
- Crop that is
  - Grazed – not easy to measure production
  - Hayed – most producers don’t weigh bales or track production
- Value of grazing – national program
2013 and Succeeding Crop Years - Pasture, Rangeland, Forage Availability

Insurance Plan
- (13) Rainfall Index
- (14) Vegetation Index
Program Overview – RI/VI

AREA plans only

- Losses cover an area called a grid
- No individual coverage
  - Does NOT measure actual individual production
- Index – based on deviation from normal/historical
- No loss adjustments, records, etc.
- Timely payments
- Does not reward poor management practices
  - Producer cannot influence outcome/losses
Intended Use – RI/VI

Grazing
- Established acreage of perennial forage
- Intended for grazing by livestock
- Acreage must be suitable for grazing

Haying
- Established acreage of perennial forage
- Intended for haying
- Acreage must be suitable for haying
Program Overview – RI/VI

Not required to insure 100% of acreage

• Forage utilized in the annual grazing or hay cycle can be insured without insuring all acreage
• All acres within a property may not be productive, e.g., rocky areas, submerged areas
• Provides additional flexibility for the insured to design the coverage to their specific needs
• Because the program is an area program, there is no opportunity to ‘move’ production
  • Producer cannot affect outcome/loss
Insurable Interest – RI/VI

- Intended Use – Haying – who has financial risk
  - Much like other crops
    - Share
    - Cash

- Intended Use – Grazing – Financial Risk based on
  - Percentage of interest of the livestock being grazed
  - Percentage of value gained – determines share
    - Month/Head leases considered cash leases
    - Actual $ per pound gained is cash lease. $2.00 pound gained = cash lease
    - Share of gain is share lease. 1/3 of pounds gained = share lease
Rainfall Index Overview

Rainfall Index Program

- Area Based Plan
  - Approximately 0.25 degree grid vs. county area
- Utilizes NOAA [Climate Prediction Center](https://www.climate.gov) data
  - Utilizes multiple point data, not a single point system
- Deviation from Normal from 1948 to 2011
- Single Peril vs. Multiple Peril
  - Lack of Precipitation is the only cause of loss
- Review of Historical Indices is critical
Rainfall Index Overview

Index Intervals

- Multiple Intervals offered – (11 intervals)
- Crop Year divided into 11, 2-month intervals
  - 1\textsuperscript{st} Interval begins with January-February
- Ability for producers to manage appropriate timing risks
  - Correlate to individual growth patterns and production seasons and practices
- The 2-month intervals provide for greater reaction to precipitation events vs. a yearly average
Rainfall Index Overview

Index Intervals

- The purpose of the program is to insure against lack of precipitation
  - Precipitation correlates to plant growth.
- Producers must select at least two 2-month intervals
  - Total annual forage production is influenced by precipitation in more than one 2-month interval; therefore, producers are required to insure in more than one interval.
NOAA CPC Uses Weighted Averaging Method

- Four Passes – with each successive pass, the scan radius is decreased, the weight of the closest station has higher effect on the target grid
- 4 passes insures that distant stations influence rainfall prediction in target grid, but weighting with distance decreases the influence
Will this work for me?

- Precipitation is interpolated to the grid and not measured within a grid.
  - Important to note that even if there is a weather station that reports daily to NOAA CPC inside your grid, the results will NOT equal that weather station
- Similar to NASS data used for area crop policies
  - Producers reporting to NASS – unknown
  - Surveys NASS eliminates in their quality control - unknown
Program Overview - VI

• Vegetation Index Program
  – Area Based Plan
    – Approximately 8 x 8 km grid vs. county
  – Utilizes satellite remote sensing data
    – Normalized Difference Vegetation Index (NDVI)
  – Deviation from Normal: 1989 to 2011, captures multiple perils
  – Review of historical indices and how they relate to your ranch is critical
  – Critical that peak of growing season is insured and not time periods outside those months
VI – Program Overview

Index Intervals

- Crop Year divided into 10, 3-month index intervals
  - Must select at least one interval
  - Currently can select up to 4 intervals depending on area

- Crop Practice = Index Interval

- Ability for producers to manage appropriate timing risks
  - Correlate to individual growth patterns and production seasons

- The 3-month intervals provide for greater reaction to biomass reduction events vs. a yearly average
2011 Change for VI ONLY

- Addition of Total Loss Factor (VI ONLY)
  - Accelerates the level of loss at which the maximum indemnity amount would be made – allows producers to obtain 100% payouts more frequently

- Total Loss Calculated
  - Final Index Value of 30% of normal
  - 100% of liability less deductible paid
Growing Seasons Considerations

Vegetation Index

- It all comes back to growing seasons!
- When is grass normally grown in a specific area?
- Policies purchased in intervals that are not conducive to optimum forage growth will not correlate.
- Does NRCS ecological site information help?
Daily NDVI Trends – Curry County Grid

GRID -139125, New Mexico
2010 and 2011 NDVI Trend

Normalized Difference Vegetation Index (NDVI)
Growing Seasons – NRCS Example

- Ecological Site Characteristics
- Site Name: Sandy Plains (R070BY055NM)
- Major Land Resource Area:
  - 070B-Upper Pecos River Valley
  - HCPC Warm-season tall and mid-grassland mixed with shrubs and forbs

<table>
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<tr>
<th>Month</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
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Growing Seasons – New Mexico

Insurance Experience (% of insured acres)

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<th>2012</th>
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<tr>
<td>Jan-Mar (645):</td>
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<td>30.5%</td>
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<tr>
<td>Mar-May (647):</td>
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<td>Jul-Sep (651):</td>
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<td>05.6%</td>
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<td>Sep-Nov (653):</td>
<td>01%</td>
<td>00.1%</td>
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<td>Oct-Dec (654):</td>
<td>09%</td>
<td>04.5%</td>
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</table>
Program Overview – RI/VI

Indemnity Overview

• The only insurable cause of loss is when the final grid index value is less than the coverage level (deductible) selected by the producer

• Indexes are based on normal/historical and deviation from normal/historical
SUBSIDY!!!

- Government subsidizes premium
- Coverage Level of 70% - Government Subsidy = 59%
- Coverage Level of 75% - Government Subsidy = 59%
- Coverage Level of 80% - Government Subsidy = 55%
- Coverage Level of 85% - Government Subsidy = 55%
- Coverage Level of 90% - Government Subsidy = 51%
Will this work for my area?

• Focus MUST be on the Historical Indices web site
  • Have past results tracked with observed results?
  • For Rainfall Index - did it perform in a “spotty dry” year?
  • Do production trends follow historical indices results?

• Producers MUST insure months
  • For RI – when is precipitation important for their forage?
  • For VI – Growing Season – what months have the greatest percentage
  • Program is not effective if periods are not appropriately selected
## Summary of Business

<table>
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<tr>
<th>Year</th>
<th>Policies</th>
<th>Acres Insured</th>
<th>Liability</th>
<th>Indemnities</th>
<th>Loss Ratio</th>
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<td>12072</td>
<td>31M</td>
<td>$408M</td>
<td>$55M</td>
<td>.68</td>
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<td>2011</td>
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<td>$516M</td>
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<td>48M</td>
<td>$784.7M</td>
<td>$117.8M to date*</td>
<td>.72 to date*</td>
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<td>19559</td>
<td>46.9M</td>
<td>$815.4M</td>
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* 2012 Indemnities and loss ratio does not include full year. Last 2 index intervals are not included or completed. Loss Ratio may exceed 1.0
** 2013 data is incomplete. The numbers will grow.
Where Does RMA Go From Here?

- Nearing the end of the pilot
- Do the policies work as intended
- Are there unintended consequences
- Evaluation
- Education hurdles
- Other products coming
- Producer interest
Summary: Rainfall & Vegetation

- Critical that the Historical and Decision Support Tools are understood and used
  - Must spend time reviewing the historical and comparing to past production
- The basis of decision to purchase MUST be based on an analysis between the historical results as compared to a producer’s results.
- As with any area plan – results may not track 100% of the time
- Critical the appropriate Index Intervals are selected
Questions?
RMA Website & Available 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. The program divides the country into six regions due to different weather patterns, with pilots available in select counties.

- PRF Fact Sheet
- Frequently Asked Questions
- County Availability (PDF): Map | Text
- Basic Provisions (PDF)
- Policy Provisions (PDF)
- Insurance Standards Handbook (PDF)
- Training Materials
- Grid ID Locator: Interactive Map
- Grid ID Locator: Latitude/Longitude Lookup
- RI and VI Reports (requires Grid ID from above)
- Decision Support Tool
- Historical Indices

Vegetation Index (VI) - is based on the U.S. Geological Survey's Earth Resources Observation and Science (EROS) normalized difference vegetation index (NDVI) data derived from satellites observing long-term changes in greenness of vegetation of the earth since 1989. The program divides the country into six regions due to different weather patterns, with pilots available in select counties.

- PRF Fact Sheet
- Frequently Asked Questions
- County Availability (PDF): Map | Text
- Basic Provisions (PDF)
- Policy Provisions (PDF)
- Insurance Standards Handbook (PDF)
- Training Materials
- Grid ID Locator: Interactive Map
- Grid ID Locator: Latitude/Longitude Lookup
- PRF Reports (requires Grid ID from above)
- Decision Support Tool
- Historical Indices

Forage Production Index - is based on NASS county level hay yield data (all hay or alfalfa hay). The index reflects how much hay is produced relative to the long-term trend for the
Find a Location: Humboldt, KS

Current Location:
- Grid ID: 21438
- Latitude: 37.79391
- Longitude: 95.51931
- County: Allen
- State: Kansas
- Address: Logan, KS, USA

Grid Tools:
- Decision Support Tool
- Historical Rainfall Indices
- View CBV Report
- View Premium Rate Report
- View FGI and PF Report

Vegetation
Rainfall

Clear All

Zoom to Grids

This website is a product of AirForce, GMS, and RMA.
PRF Decision Support Tool

Please Select a Location:
- State: Kansas
- County: Allen
- Grid: 21438

Protection Information:
- Insured Crop Type: Grazingland
- Coverage Level (%): 90
- Protection Factor (%): 100
- Share (%): 100
- Insurable Acres: 500
- Sample Year: 2009

Table:

| Index Interval | Insured Acres per Index Interval | Policy Protection per Unit | Premium Rate per $100 | Total Premium ($/acre) | Premium Subsidy ($/acre) | Producer Premium ($/acre) | Actual Index Value | Indemnity
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<td>22.87</td>
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Per Acre
- Policy Protection per Unit: $2,298
- Premium Rate per $100: 22.87
- Total Premium ($/acre): $5.05
- Premium Subsidy ($/acre): 2.98
- Producer Premium ($/acre): 2.47
- Actual Index Value: 46.4
- Indemnity: $10.70

County Base Value per Acre: $13,248
- $2,452
- $1,251
- $1,201
- $1,070

Calculate
Intencalc
Example of Information - Chart
Example of Information - Graph