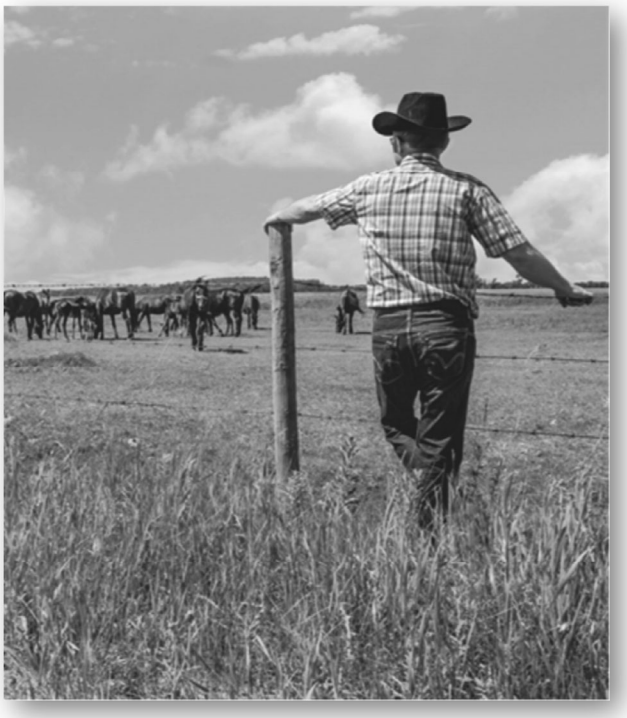
Livestock Risk Protection (LRP) and Price Risk Management for Hawaii Beef Production

Jay Parsons – University of Nebraska-Lincoln

John P. Hewlett – University of Wyoming

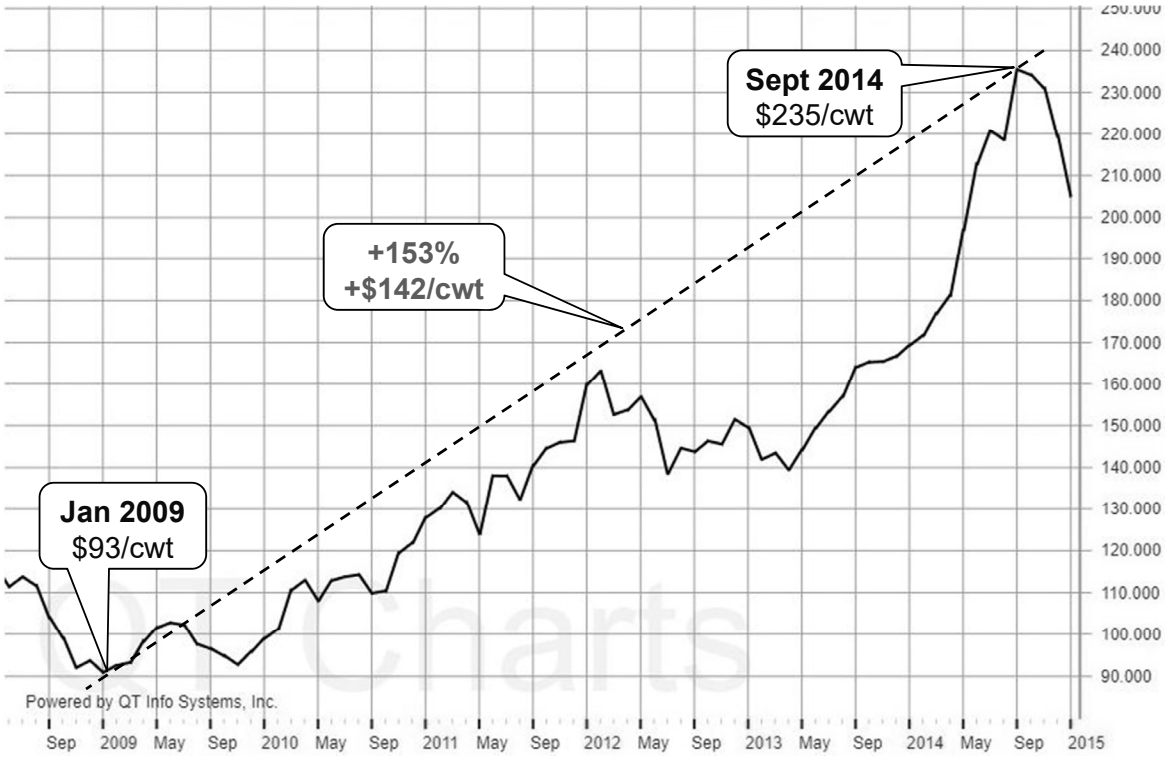
What are producers most concerned about when marketing their cattle?



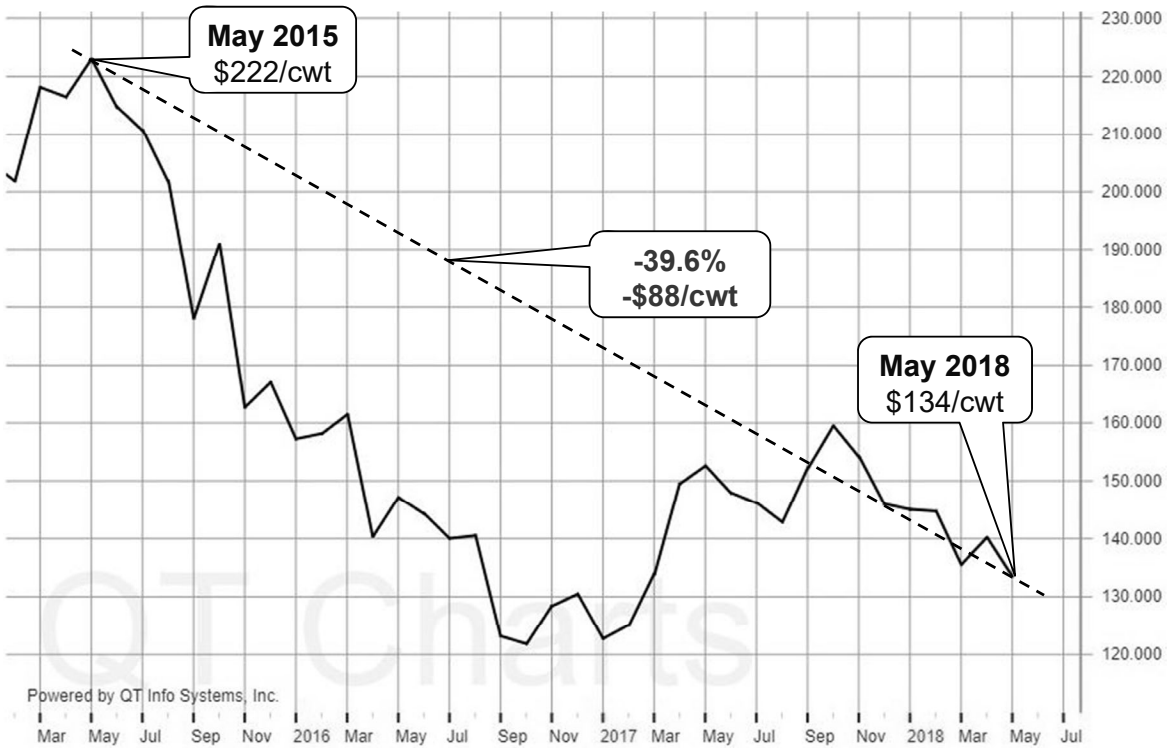
Managing Cash Price Risk

- Producers and processors who physically trade cattle are generally most concerned with managing the risk of *changing cash market prices*
- This source of risk might be addressed by:
  - Private contracting
  - Futures markets
  - *Livestock Risk Protection* (LRP) insurance to protect against falling national cattle prices
- Controls may include *basis* and *basis risk*

Feeder Cattle Futures Market



Feeder Cattle Futures Market



Cash Markets

- Cash markets are those markets where the agricultural commodity is physically traded
- Cash markets are often referred to as “local” markets or “spot” markets
- Examples
  - Livestock Auction Barn
  - Video auction sales
  - Direct/On Farm sales to feedlots

Futures Markets

- Futures markets trade Chicago Mercantile Exchange (CME) contracts that specify delivery of commodities at some *future date*
- Rarely does the physical delivery actually take place between buyers and sellers of a particular contract
- Futures market prices together with a *basis value* determine the *cash price* in the local market

Cash & Futures Market Relationship

- *Cash Price* = Futures Price + Basis
- *Basis* = Cash Price – Futures Price

  Basis is usually less than 0

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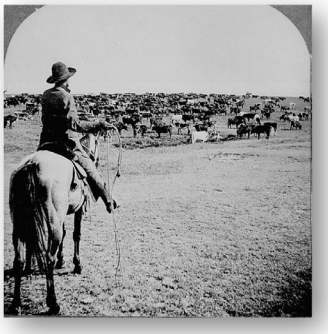
Factors Influencing Basis

- *National Market*: Supply and Demand
  - Seasonality of livestock markets
- *Local Market*: Supply and Demand at the local auction market(s)
  - Quality and quantity of livestock available for sale
  - Competitive nature of the auction
    - Number of buyers present compared to the quantity of animals available
    - Form and numbers of livestock desired by each of the buyers



Cash Price = Futures Price + Basis

- A CME futures contract is used to “lock in” a *futures* (national) *price*
- A CME *options contract* is used to “lock in” a floor or ceiling for the *futures* (national) *price*
- *Livestock Risk Protection* (LRP) insurance contracts can also be used to “lock in” a floor for the *futures* (national) *price*

Cash Price = Futures Price + Basis

continued

- A *basis contract* can be used to lock in the *basis*, the difference between the cash price received and a reference price (usually the *futures contract* [national]) *price*. This is sometimes referred to as "formula pricing" depending upon the situation.

- The only sure way to lock in the *cash price* received is to enter into a *local cash contract* at an agreed upon price to deliver the cattle.

LRP Feeder Cattle

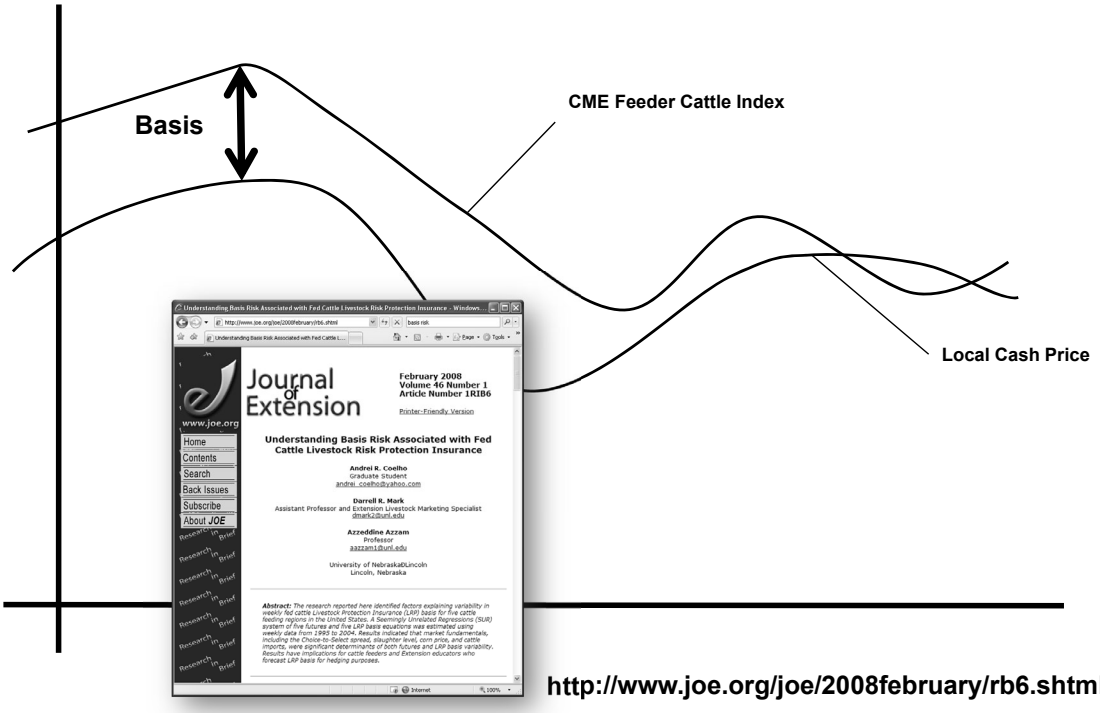
Livestock Insurance: LRP for Feeder Cattle Coverage

- LRP for feeder cattle offers *price* protection for feeder cattle producers. It does <u>*not*</u> cover sickness or death of the cattle or insure against possible rising feed costs.

- Now available in all counties across all states (including Hawaii)

- Producers remain subject to ***basis risk***

Livestock Insurance: LRP for Feeder Cattle Coverage Basis

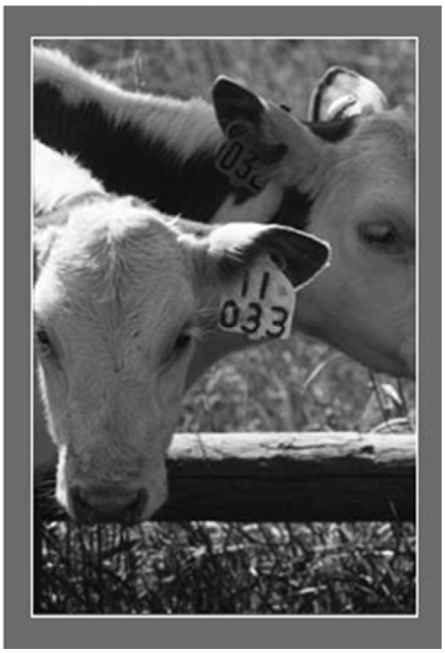


http://www.joe.org/joe/2008february/rb6.shtml

Livestock Insurance: LRP for Feeder Cattle
Basics of LRP

- **Product Offered:** Protection for producers against declines in cattle prices below the established *coverage price*

- **Insurance Period:** Offered for 13, 17, 21, 26, 30, 34, 39, 43, 47 or 52-week periods
  - *The producer will choose an insurance period giving an end date closest to the time cattle will be marketed or time when cattle will reach the desired weight*



Livestock Insurance: LRP for Feeder Cattle
Basics of LRP (cont.)

- **Application:** An application is required to purchase insurance coverage

- **Specific Coverage Endorsement:** A producer must file a Specific Coverage Endorsement for each *group of feeder cattle* to be insured. Several endorsements may be filed under one application as long as beneficial interests are the same

Livestock Insurance: LRP for Feeder Cattle
Types and Weights of Feeder Cattle Insurable

- Steer feeder cattle < 6.0 cwt for steers and bulls
  and steers only from 6.0 to 9.0 cwt

- Heifer feeder cattle < 6.0 cwt
  and heifer feeder cattle from 6.0 to 9.0 cwt

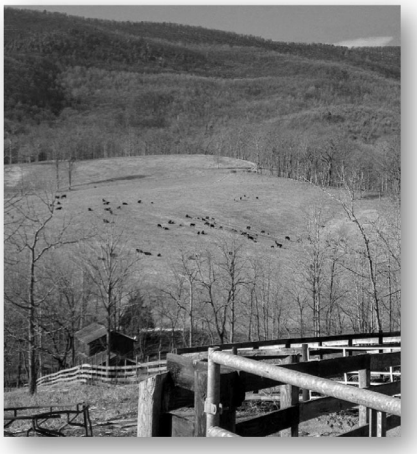
- Predominantly Brahman heifers, steers, and bulls < 6.0 cwt
  and predominantly Brahman heifers and steers from
  6.0 cwt to 9.0 cwt

- Predominately dairy heifers, steers and bulls < 6.0 cwt
  and predominately dairy heifers and steers 6.0 to 9.0 cwt

Livestock Insurance: LRP for Feeder Cattle
Policy Limits

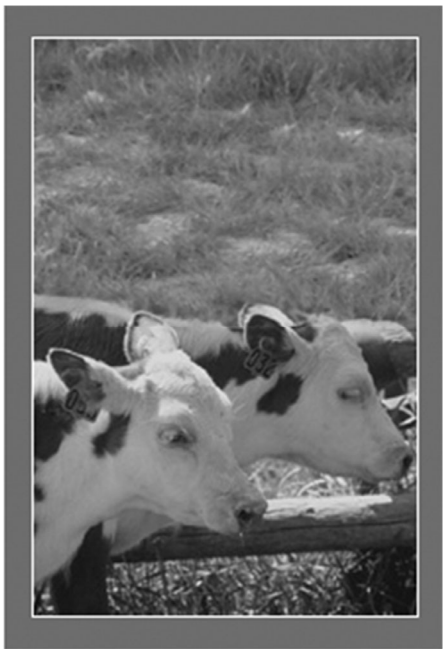
- "Crop" year: [July 1 to June 30]
  - ***Annual Policy Limits:*** *The maximum number of head of feeder cattle that may be covered during a crop year is 6,000 head*

- Endorsement Limits:
  - *A limit of 3,000 head of feeder cattle may be insured under any one Specific Coverage Endorsement*



Livestock Insurance: LRP for Feeder Cattle
Coverage Prices and Levels

- Coverage Prices
  - *The prices that may be insured by the producer*
- Coverage Levels
  - *Based on the chosen coverage price and range from 70 to 100% of the expected end value*
- Price Adjustment Factors
  - *Account for differences between steer prices and prices of other types and weight of cattle*
  - *Adjustments are applied prior to posting on the RMA website*



Livestock Insurance: LRP for Feeder Cattle
Actual and Expected End Value of Feeder Cattle

- Expected End Value
  - *The expected price at the end of an insurance period for each specific type and weight of feeder cattle announced daily on the RMA website*
- Actual End Value
  - *The value of the cash-settled CME feeder cattle index on the end date of the insurance period, adjusted by RMA for feeder cattle type and weight*

Livestock Insurance: LRP for Feeder Cattle
Premium Subsidy Levels

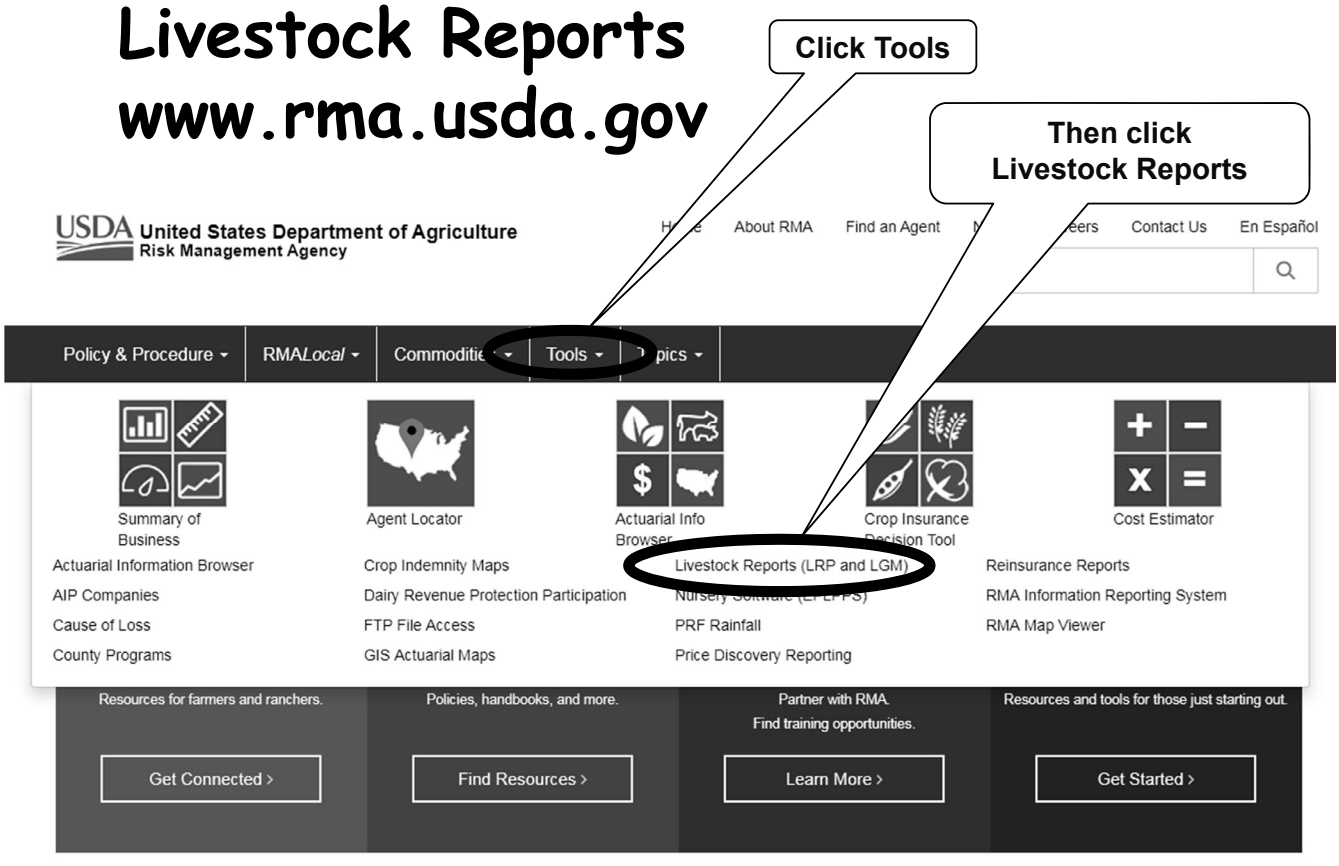
- RMA provided a 13% premium subsidy on all LRP contracts in the past
- New Subsidy Levels as of July 1, 2019

Table 1: Livestock Risk Protection (LRP Insurance) Premium Subsidies
(effective July 1, 2019)

Fed Cattle, Feeder Cattle, and Swine		Lamb	
Coverage Level	Subsidy	Endorsement Length	Subsidy
95-100%	20%	13 weeks	20%
90-94%	25%	26 weeks	35%
80-89%	30%	39 weeks	38%
70-79%	35%		

- New and beginning producers qualify for an *additional* 10% subsidy

Livestock Reports
www.rma.usda.gov



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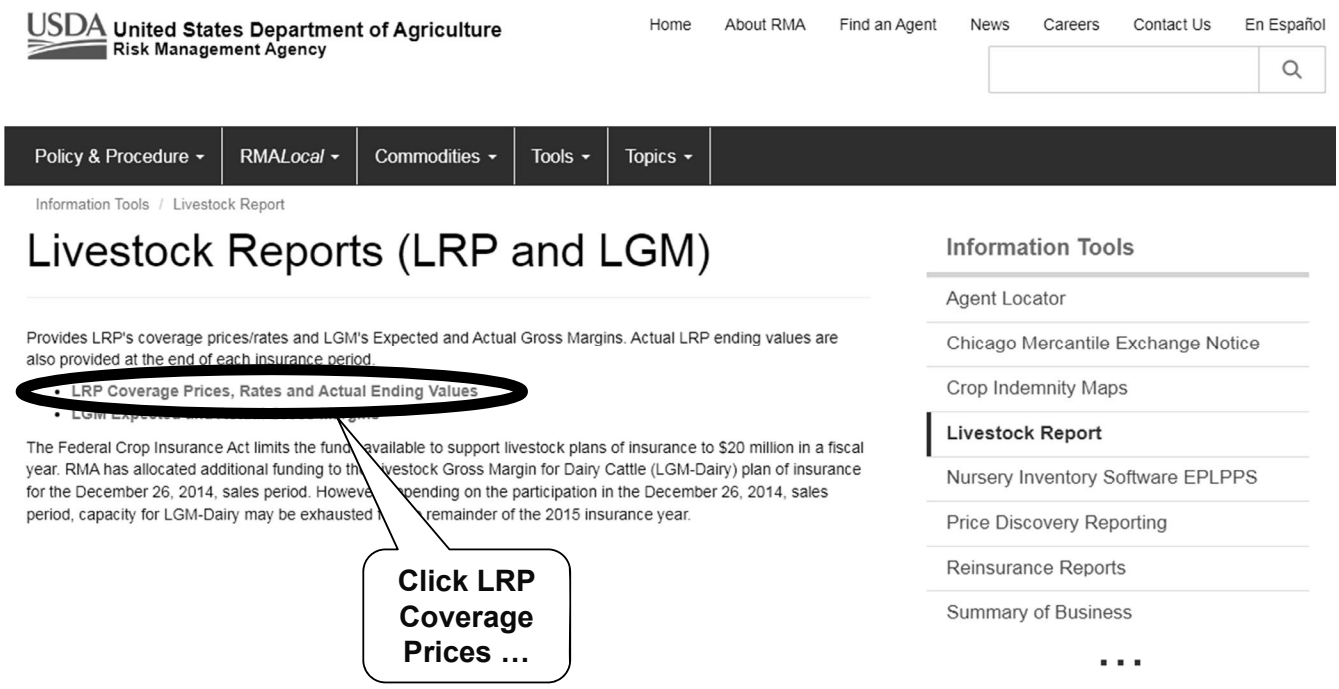
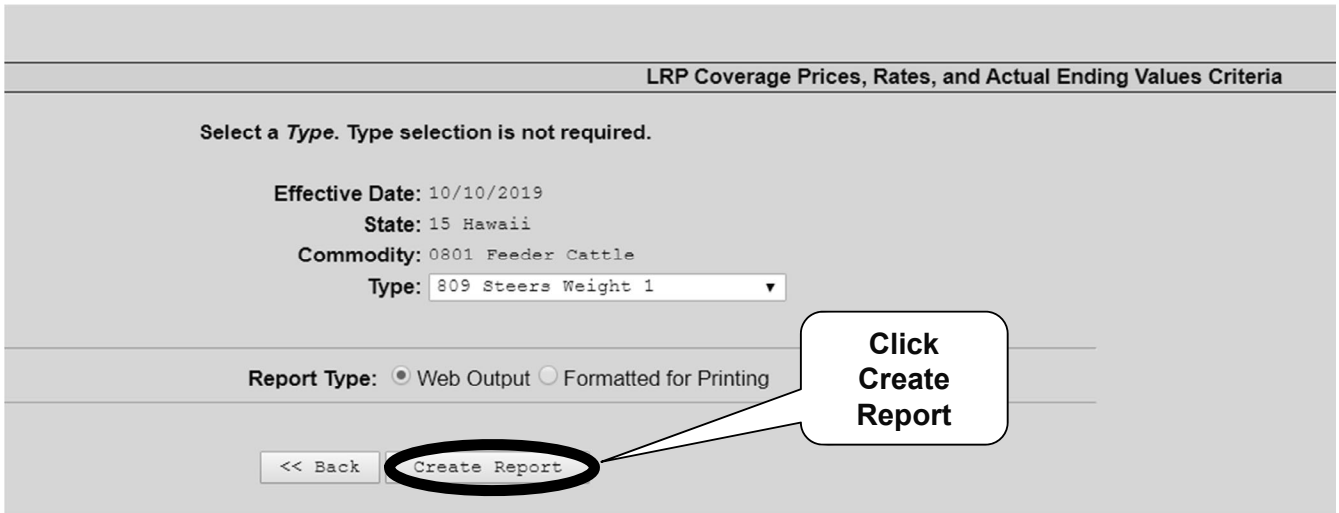


LRP Coverage Prices, Rates and Actual Ending Values Criteria



★ Unsubsidized cost per cwt.

LRP Coverage Prices, Rates, and Actual Ending Values - Report for 10/10/2019

State	County	Endorsement Length	Commodity	Type	Practice	Crop Year	Exp. End Value	Coverage Price	Coverage Level	Rate	Cost Per CWT	End Date	Actual End Value
15 Hawaii	998 All Counties	13	0801 Feeder Cattle	809 Steers Weight 1	997 No Practice Specified	2020	154.834	$154.370	0.997000	0.036115	5.575	01/09/2020	
15 Hawaii	998 All Counties	13	0801 Feeder Cattle	809 Steers Weight 1	997 No Practice Specified	2020	154.834	$152.170	0.982800	0.029155	4.437	01/09/2020	
15 Hawaii	998 All Counties	13	0801 Feeder Cattle	809 Steers Weight 1	997 No Practice Specified	2020	154.834	$149.970	0.968600	0.023120	3.467	01/09/2020	
15 Hawaii	998 All Counties	13	0801 Feeder Cattle	809 Steers Weight 1	997 No Practice Specified	2020	154.834	$147.770	0.954400	0.017941	2.651	01/09/2020	
15 Hawaii	998 All Counties	13	0801 Feeder Cattle	809 Steers Weight 1	997 No Practice Specified	2020	154.834	$145.570	0.940200	0.013776	2.005	01/09/2020	
15 Hawaii	998 All Counties	13	0801 Feeder Cattle	809 Steers Weight 1	997 No Practice Specified	2020	154.834	$143.370	0.926000	0.010427	1.495	01/09/2020	
15 Hawaii	998 All Counties	13	0801 Feeder Cattle	809 Steers Weight 1	997 No Practice Specified	2020	154.834	$141.170	0.911800	0.007902	1.116	01/09/2020	
15 Hawaii	998 All Counties	13	0801 Feeder Cattle	809 Steers Weight 1	997 No Practice Specified	2020	154.834	$138.970	0.897500	0.005794	0.805	01/09/2020	
15 Hawaii	998 All Counties	13	0801 Feeder Cattle	809 Steers Weight 1	997 No Practice Specified	2020	154.834	$136.770	0.883300	0.004110	0.562	01/09/2020	
15 Hawaii	998 All Counties	13	0801 Feeder Cattle	809 Steers Weight 1	997 No Practice Specified	2020	154.834	$134.570	0.869100	0.003008	0.405	01/09/2020	
15 Hawaii	998 All Counties	17	0801 Feeder Cattle	809 Steers Weight 1	997 No Practice Specified	2020	154.172	$152.770	0.990900	0.038710	5.914	02/06/2020	

Livestock Insurance: LRP for Feeder Cattle Example

LRP Coverage Prices, Rates, and Actual Ending Values - Report for 10/10/2019

State	County	Endorsement Length	Commodity	Type	Practice	Crop Year	Exp. End Value	Coverage Price	Coverage Level	Rate	Cost Per CWT	End Date	Actual End Value
15 Hawaii	998 All Counties	43	0801 Feeder Cattle	809 Steers Weight 1	997 No Practice Specified	2020	159.618	$153.790	0.963500	0.042329	6.510	08/06/2020	

Contract Data	Value
Number of Steers	50
Expected Weight	400
Current Date	October 10
Marketing Date	August 6
Insurance Period	43 Weeks
Expected Ending Value	$159.168
Coverage Level	0.9635
Coverage Price	$153.79

Livestock Insurance: LRP for Feeder Cattle Example

Contract Data	Value	Source
Insured Value	$30,758	50 hd x 4.0 cwt/hd x $153.79/cwt
Premium Rate	0.042329	RMA
Total Premium	$1,302	30,758 x 0.042329
Subsidy Rate	20%	RMA
Subsidy Amount	$260	1,302 x 0.20
Producer Premium	$1,042	$1,302 – $260

Producer Premium = $1,042/(200 cwt) = $5.21/cwt

Livestock Insurance: LRP for Feeder Cattle Example

- Suppose the CME-reported *actual ending value* is $165.93/cwt. Would you receive an indemnity?
  - **NO** | $165.93 > $153.79 (*coverage price*)
- Suppose the CME-reported *actual ending value* is $133.83/cwt. Would you receive an indemnity?
  - **YES** | $133.83 < $153.79 (*coverage price*)
  - **INDEMNITY** = $19.96/cwt x 200 cwt = $3,992
- The CME-reported cash index is **independent** of the *actual (cash)* marketing decision and outcome

Livestock Insurance: LRP for Feeder Cattle Example

- Suppose you actually market your steers at the local level as follows:

  50 hd. X 400 lbs./hd. X $128.00 cwt = $25,600.00

- **Total Sales Revenue** = **$25,600.00**

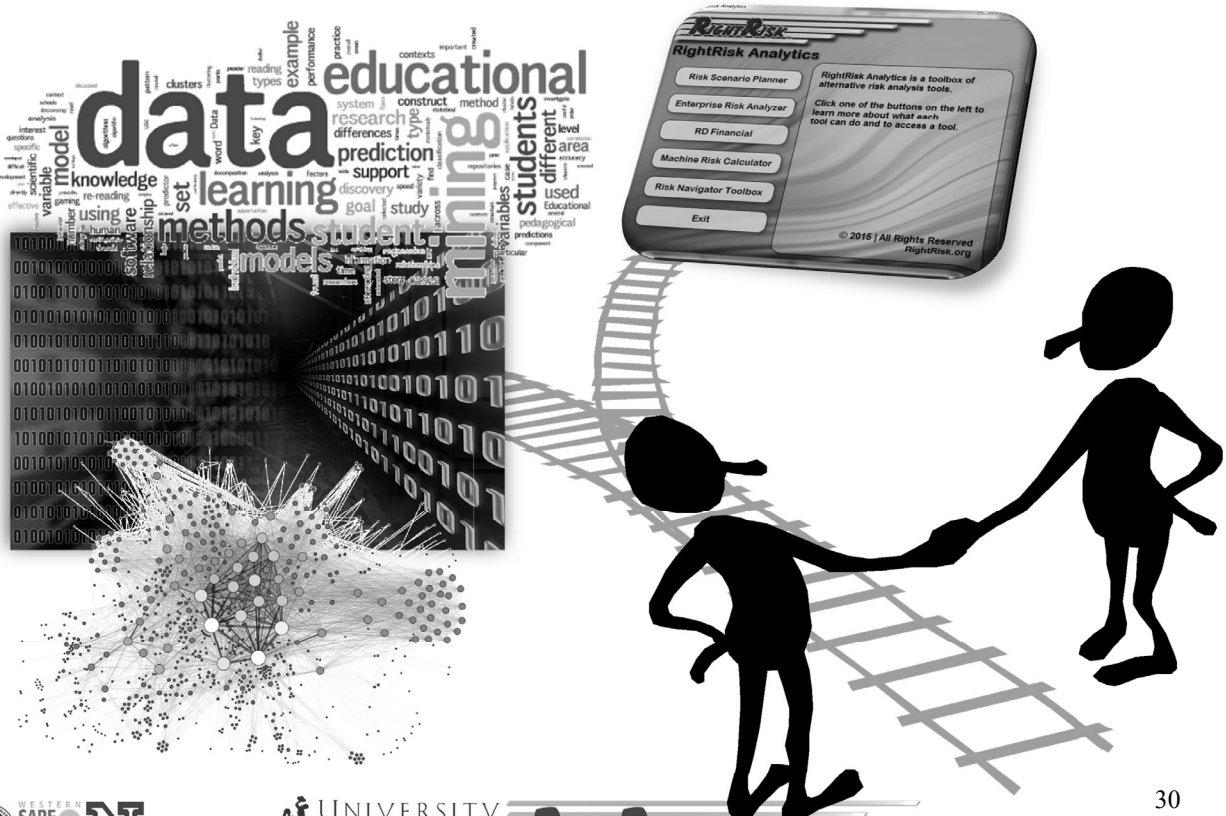
- **Net Revenue = Sales + Indemnity – Producer Premium**

  Net Revenue = $25,600.00 + 3,992 – 1,042 = **$28,550**

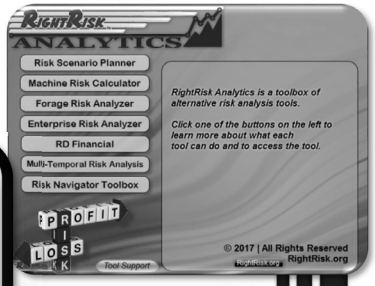
  Net Revenue per cwt. = $28,550 / 200 cwt = **$142.75/cwt**.

Floor price *= Coverage Level – Premium + Basis = 153.79 – 5.21 – 5.83*

Evaluating Alternatives

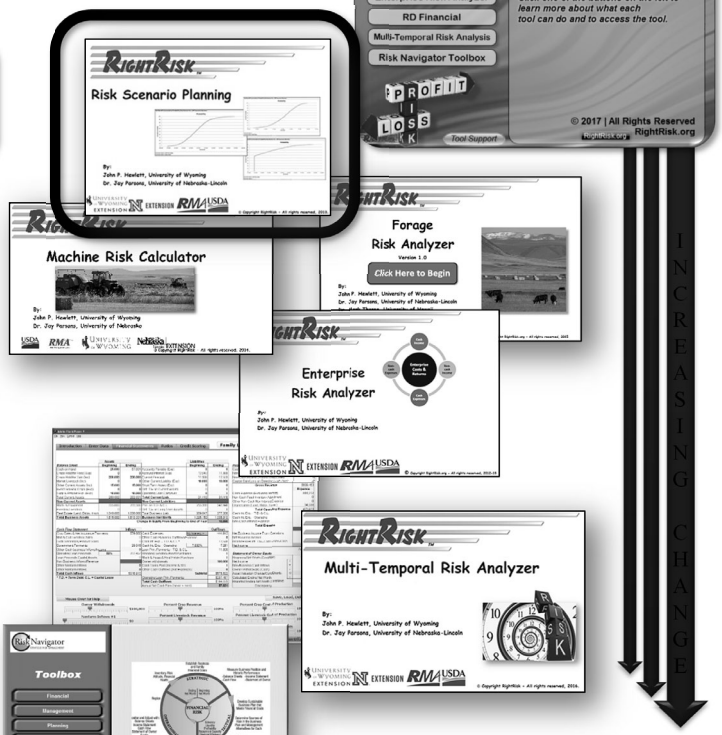


RightRisk Analytics:
~ *tools to evaluate alternatives*



Risk Scenario Planner
relatively minor changes, risk analysis

- **Machine Risk Calculator**
  machine costs, custom rates, risk analysis
- **Forage Risk Analyzer**
  lease arrangements, forage supply, housing costs
- **Enterprise Risk Analyzer**
  larger enterprise-level, enterprise mix changes
- **RDFinancial**
  substantial changes, whole farm budgets, financial analysis, credit scoring
- **Multi-Temporal Risk Analysis**
  partial budgets incorporating time, risk analysis
- **Risk Navigator**
  strategic risk planning and analysis



Partial Budget Framework

A partial budget is a tool used to analyze the **financial effect** of simple management changes

- **Positive Effects**
  - Added Returns
  - Reduced Costs
- **Negative Effects**
  - Added Costs
  - Reduced Returns

Added Returns	**Added Costs**
Reduced Costs	**Reduced Returns**

Risk Scenario Planning Tool

RightRisk™ **Partial Budget For:** *Marketing w/ LRP Insurance Decision*

Positive Effects				*Negative Effects*			
Added Returns	**Quantity**	**Value**	**Total**	**Added Costs**	**Quantity**	**Value**	
Basis Value		$ (5.83)	$ -	*LRP Premium*	200	$ 5.21	$ 1,042.00
LRP Price Index		$ 159.62	$ -				$ -
LRP Coverage Index		$ 153.79	$ -				$ -
			$ -				$ -
Calf Sales (cwt.)	200	$ 153.79	$ 30,758.00				$ -
LRP Indemnity	200	$ -	$ -				$ -
			$ -				$ -
			$ -				$ -
			$ -				$ -
			$ -				$ -
			$ -				$ -
			$ -				$ -
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			$ -				$ -
			$ -				$ -
			$ -				$ -
			$ -				$ -
			$ -				$ -
			$ -				$ -
Total Added Returns			$ 30,758.00	**Total Added Costs**			$ 1,042.00

Net Benefit of: Marketing w/ LRP Insurance Decision $ 29,716.00

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Create a Risk Scenario by Adding Uncertainty

Risk Scenarios

Uncertain Value 1 ☑ Include

Description	**Cell**
LRP Price Index	D7

Current Value (Most Likely)	159.62
Minimum Value	135
Maximum Value	170

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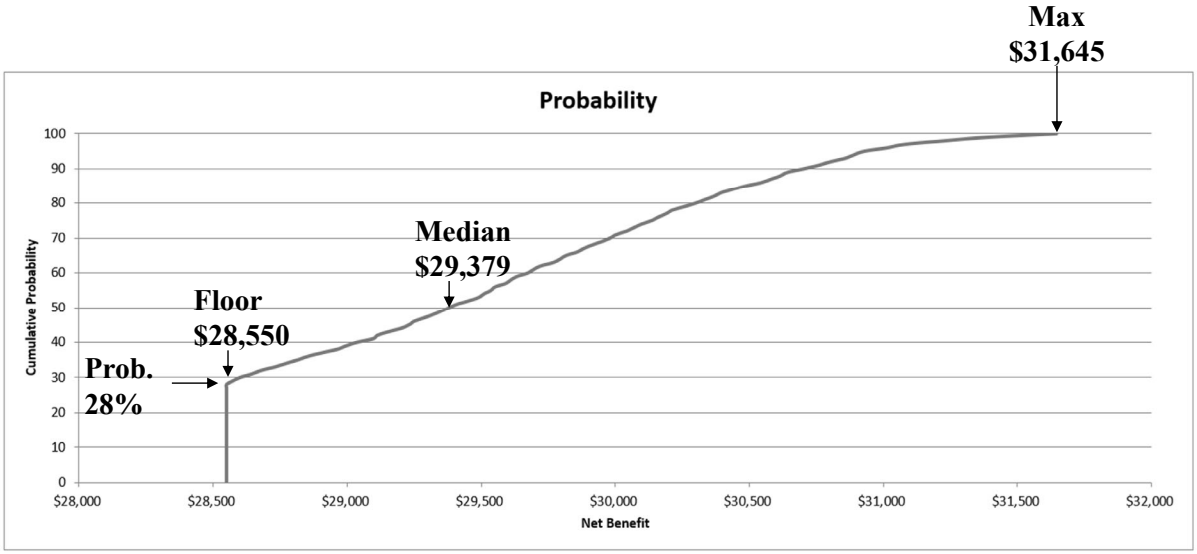
Distribution Demonstrates Range of Possibility



Update Risk Scenario with Second Uncertainty

Risk Scenarios

Uncertain Value 1 ☑ Include

Description	Cell
LRP Price Index	D7

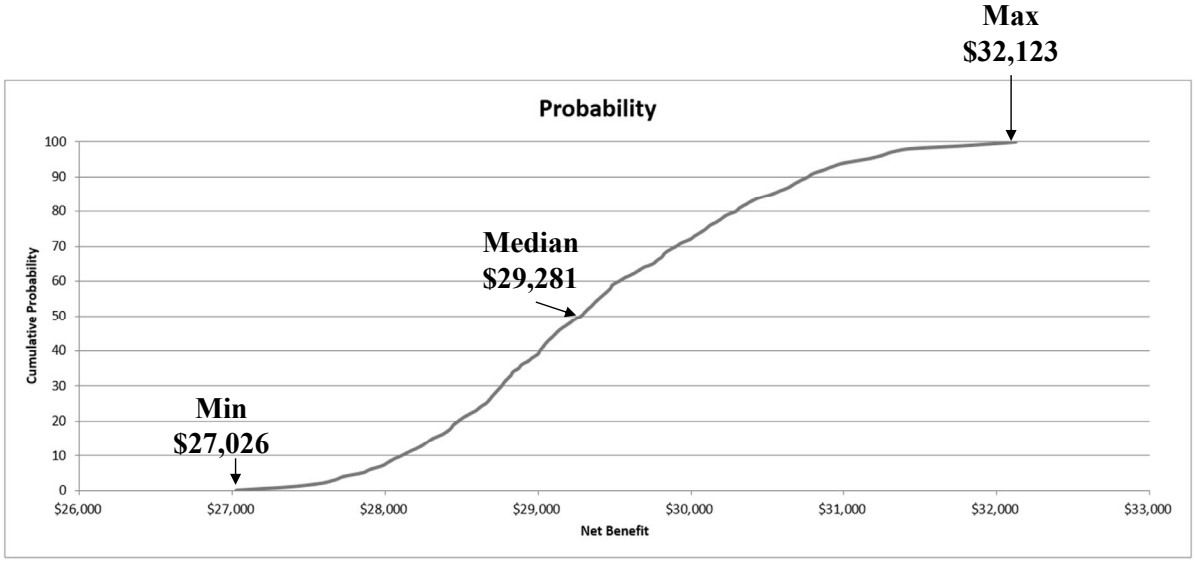
Current Value (Most Likely)	159.62
Minimum Value	135
Maximum Value	170

Uncertain Value 2 ☑ Include

Description	Cell
Basis Value	D6

Current Value (Most Likely)	-5.83
Minimum Value	-15
Maximum Value	0

Updated Range of Possibility with variable basis



Comparison to No Insurance Scenario

RightRisk

Partial Budget For: *Marketing w/ LRP Insurance Decision*

Positive Effects				*Negative Effects*			
Added Returns	**Quantity**	**Value**	**Total**	**Added Costs**	**Quantity**	**Value**	
Basis Value		$ (5.83)	$ -	*LRP Premium*	0	$ 5.21	$ -
LRP Price Index		$ 159.62	$ -				$ -
LRP Coverage Index		$ 153.79	$ -				$ -
			$ -				$ -
Calf Sales (cwt.)	200	$ 153.79	$ 30,758.00				$ -
LRP Indemnity	0	$ -	$ -				$ -
			$ -				$ -
			$ -				$ -
			$ -				$ -
			$ -				$ -
			$ -				$ -
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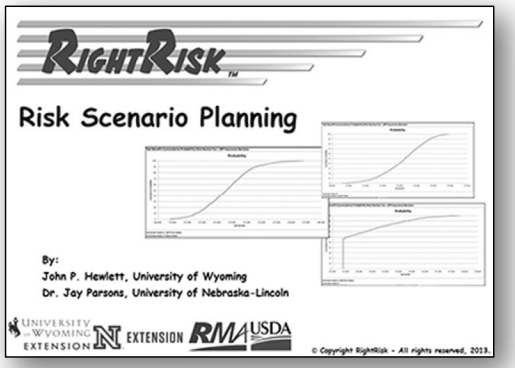
			$ -				$ -
			$ -				$ -
			$ -				$ -
			$ -				$ -
			$ -				$ -
Total Added Returns			$ 30,758.00	**Total Added Costs**			$ -

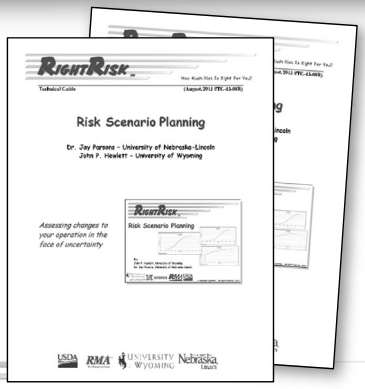
Range of Possibilities Without Insurance

Summary

The Risk Scenario Planning tool:

- Can be a useful tool for analyzing **management** strategies and decisions involving **risk**
- Represents a better way to handle the presence of **uncertainty** by thinking in terms of **distributions** of possible outcomes over time
- Results in more **informed** decision-making
- GUIDE offers **15-page** description of the tool and working examples
- Website offers examples for **download** and a place to get started





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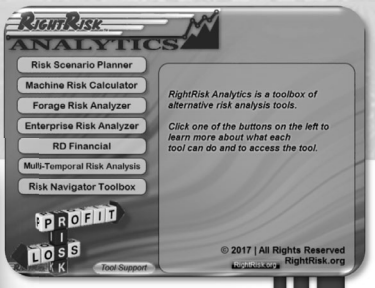

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  partial budgets incorporating time, risk analysis
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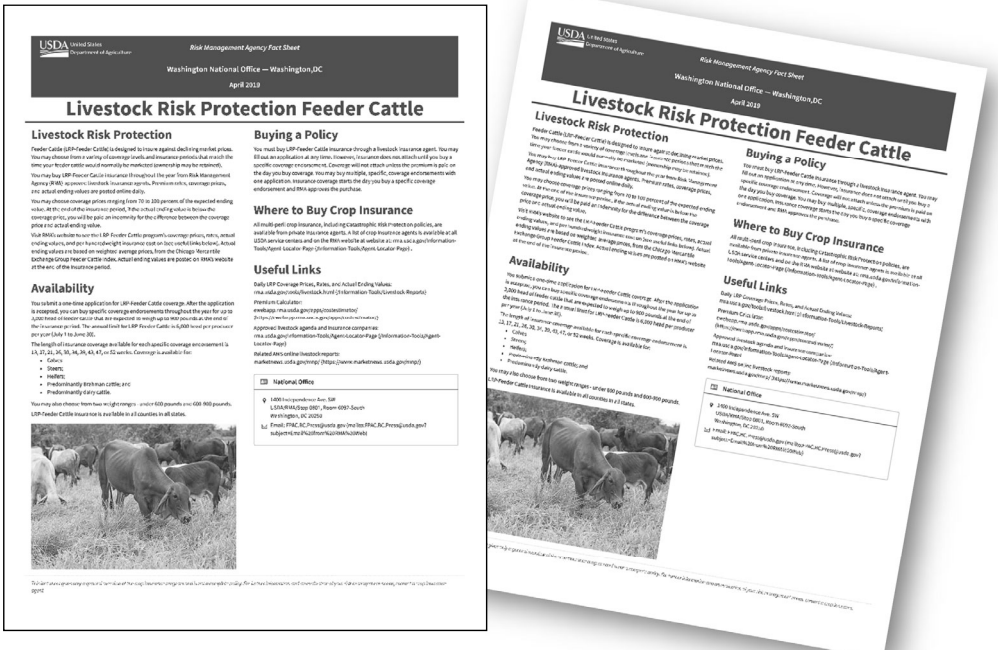
  strategic risk planning and analysis

http://RightRisk.org > tools

RMA LRP Fact Sheet



Risk Management Profiles

RightRisk Newsletter

Volume 1, Issue 11 — November 2013

RightRisk™

RightRisk News

How Much Risk is Right for You?

Dates to Remember

- **November 15, 2013**: Pasture, Rangeland, Forage insurance (PRF)
- **November 15, 2013**: Apiculture
- **November 15, 2013**: Noninsured Crop Disaster Assistance Program (NAP) acreage reporting deadline for forage crops including grazing
- **December 1, 2013**: NAP application deadline for fall seeded crops and forage

Risk Management Strategies for Livestock Producers

Livestock and bee producers have several risk management options to manage forage production risk. Given recent periods of extreme drought and price variability, managers might consider addressing forage risks using one or more insurance tools. Programs are available and can help protect against serious production losses, while helping to guarantee revenue levels.

Pasture, rangeland, forage (PRF) and Apiculture insurance protect against a decline in an index. The index is designed to serve as a proxy for pasture, range, and hay production in a specific area of land or grid.

The Noninsured Crop Disaster Program (NAP), administered by the Farm Service Agency (FSA) is designed to provide low cost catastrophic loss coverage to producers when federal crop insurance is not available.

NAP coverage may be used separately but not in conjunction with PRF and Apiculture insurance to provide protection against low yields, loss of inventory or prevented planting that occur due to natural disasters for a typical ranch such as: grains planted for hay (and not insured as grain), native (grass) hay and certain mixed forages, and grazingland.

Coverage begins 30 days following sign-up. NAP covers losses of 50 percent or greater of expected production, at 55 percent of the market price (set by the state committee).

The 2008 Farm Bill required that livestock and apiculture producers enroll under either NAP coverage or crop insurance for all pasture, rangeland and native hay forage crops to qualify for certain disaster assistance programs; including the Livestock Forage Disaster Program (LFP) and Emergency Assistance for Livestock, Honey Bees, and Farm-raised Fish Program (ELAP). These requirements are expected under the new Farm Bill (or extension of the 2008 Bill) but are uncertain until new legislation is passed by Congress.

Recent bulletins that outline how these programs work for operators include: "Production Risk Management Options for Wyoming Ranches: Crop Insurance and Federal Disaster Programs" and "Risk Management Programs for Honey Bee Producers in Wyoming" and many more found in the Western Risk Management Library located under at http://riskmgt.uwagec.org.

More Information is available for the programs mentioned in this article on the Internet at- www.rightrisk.org; www.rma.usda.gov; or www.fsa.usda.gov.

Risk Management Profile

VI-PRF pilot insurance minimizes feed risk for Z-F

Early fall 2010 on the Z-F Ranch found owners Bob and Betsy Zomer assessing risk management strategies for their cow-calf and yearling operation. The Zomers are situated on 12,000 acres of pasture and 200 acres of native hay in Fremont County, Wyoming. Both husband and wife were concerned about the coming production year. This year's late summer and early fall had been dry, and they were worried it would carry over into next year.

To read more see:
RightRisk.org > Resources > Risk Mgt Profiles

Highlighted Course

The Pasture, Rangeland, Forage (PRF) Pilot Insurance Program course available at RightRisk.org offers a step-by-step approach to learn more about PRF insurance and how PRF can be applied. The course includes audio and interactive features, while example farm profiles demonstrate application to real-world examples.

Course materials provide maps to assist in first deciding the type of PRF insurance available in the area. Links to appropriate Web pages help determine the grid identification numbers for individual grids. The next two sections in the course go into greater depth on Vegetative and Rainfall Index policies.

A section of the PRF course explains how to go online to the RMA website and make the most of the cost estimator. Finally, users are encouraged to compare their own yield/historical experience for their grids with that presented in the online decision tool/cost estimator Web pages.

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