

Pasture Rangeland and Forage (PRF) Insurance and Risk Management

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National Institute of Food and Agriculture
U.S. DEPARTMENT OF AGRICULTURE



WESTERN
EXTENSION
RISK MANAGEMENT
EDUCATION

EXTENSION 
UtahStateUniversity

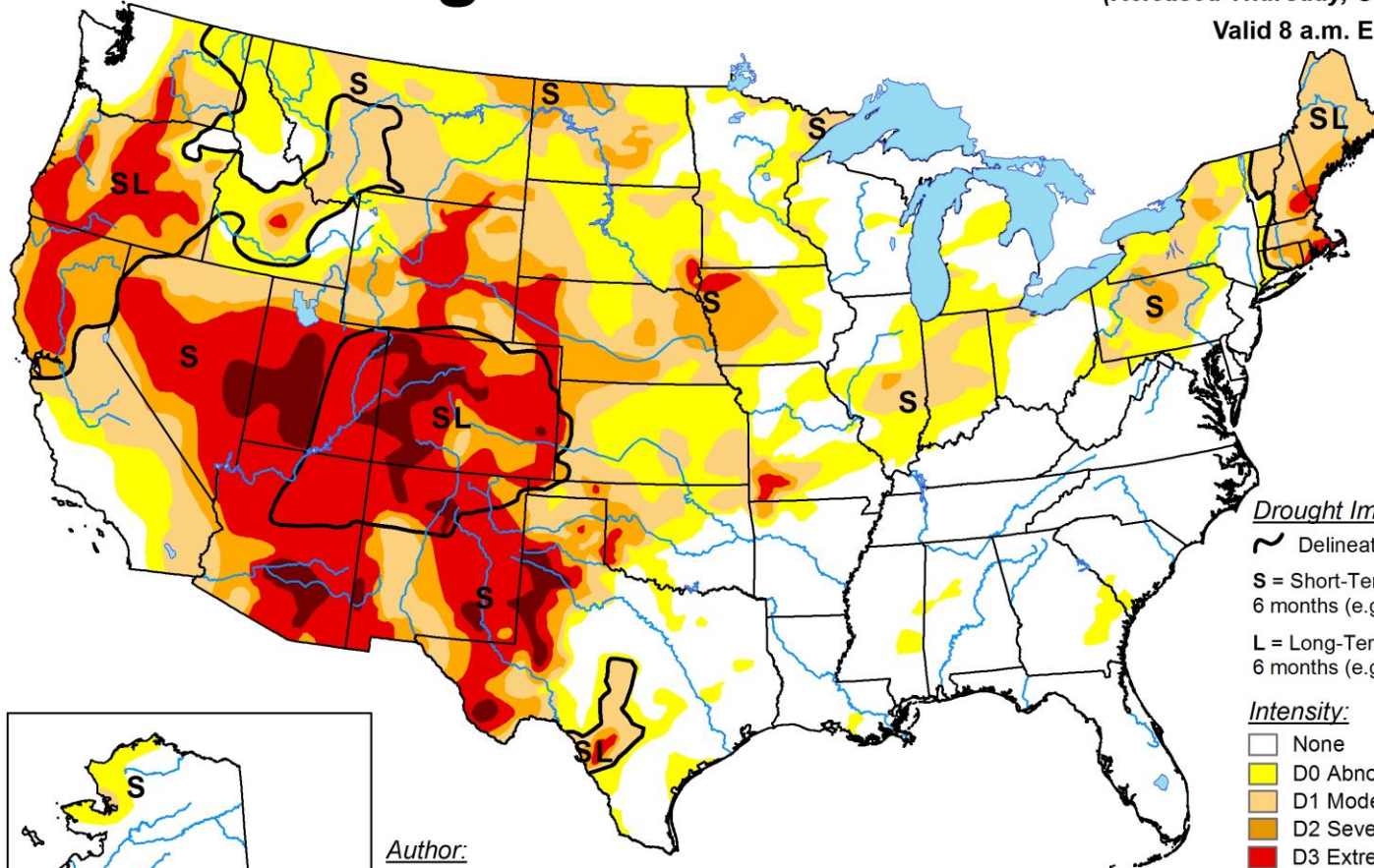
[EXTENSION.USU.EDU](https://extension.usu.edu)

U.S. Drought Monitor


October 20, 2020

(Released Thursday, Oct. 22, 2020)







Valid 8 a.m. EDT

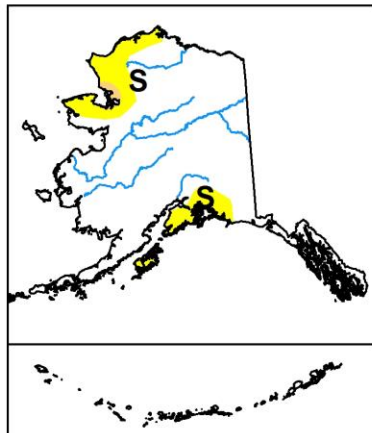


Drought Impact Types:

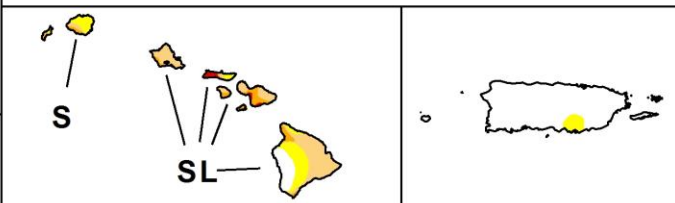
-  Delineates dominant impacts
- S** = Short-Term, typically less than 6 months (e.g. agriculture, grasslands)
- L** = Long-Term, typically greater than 6 months (e.g. hydrology, ecology)

Intensity:

-  None
-  D0 Abnormally Dry
-  D1 Moderate Drought
-  D2 Severe Drought
-  D3 Extreme Drought
-  D4 Exceptional Drought



Author:
Curtis Riganti
National Drought Mitigation Center



The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

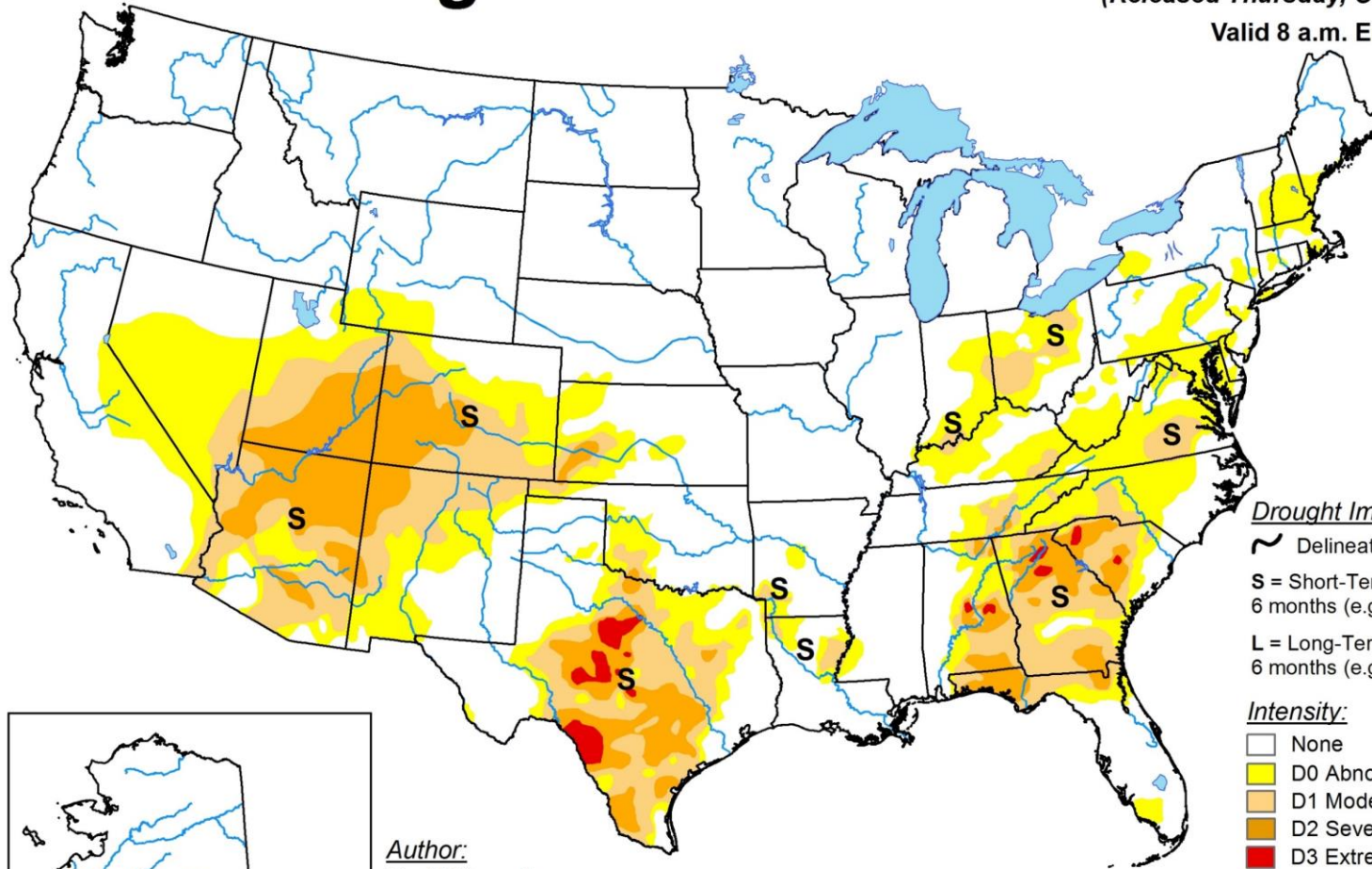


droughtmonitor.unl.edu

U.S. Drought Monitor

October 29, 2019
(Released Thursday, Oct. 31, 2019)

Valid 8 a.m. EDT

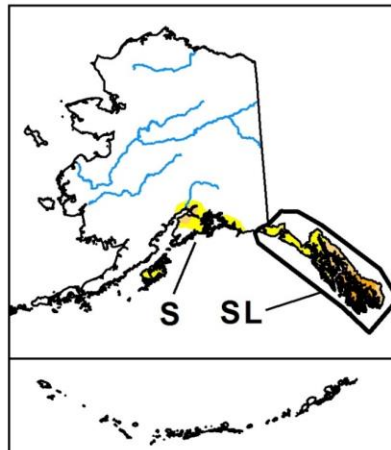


Drought Impact Types:

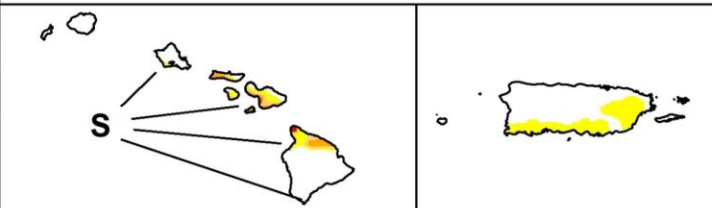
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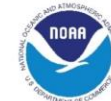
- None
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Author:
David Simeral
Western Regional Climate Center



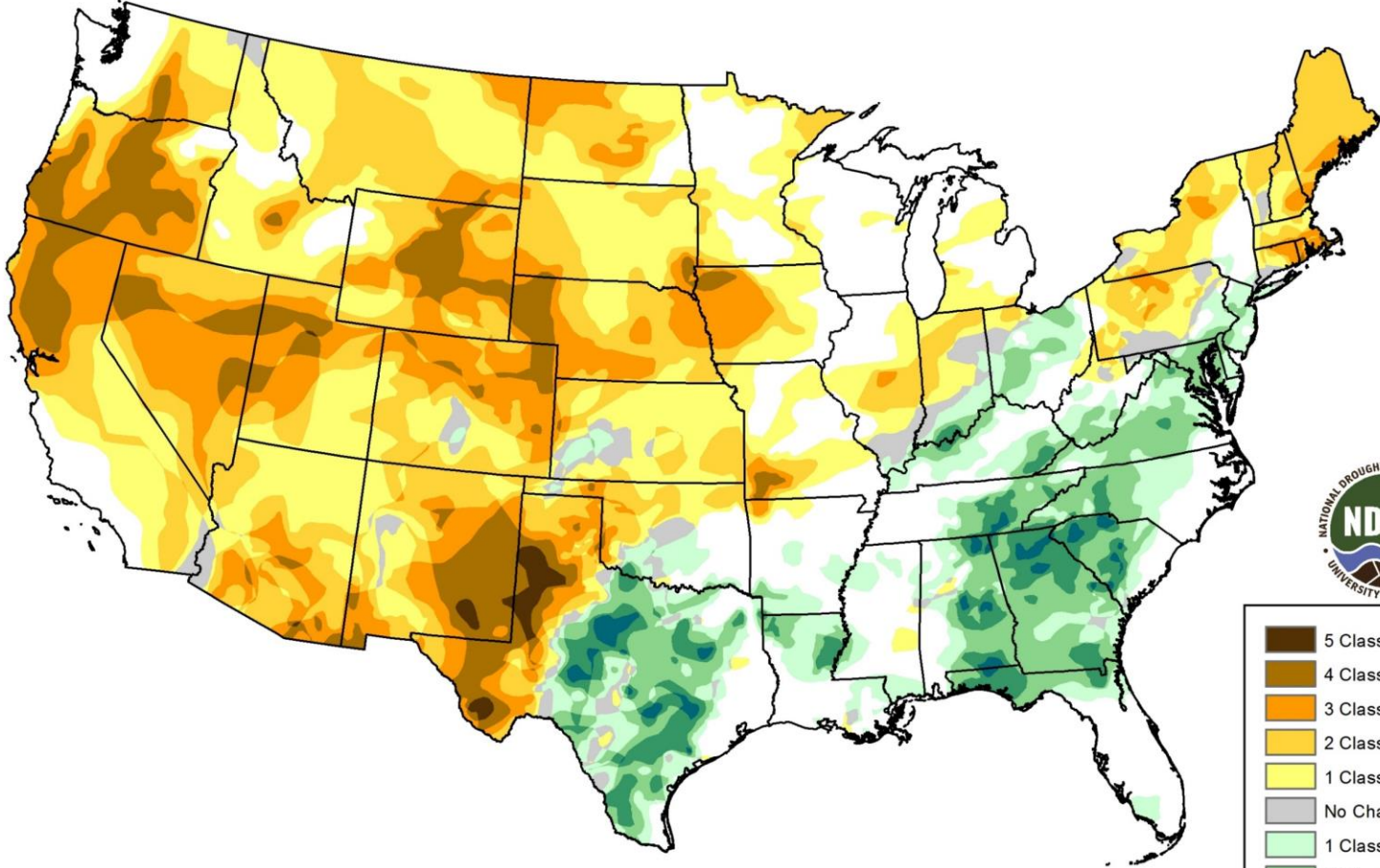
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.



droughtmonitor.unl.edu

U.S. Drought Monitor Class Change - CONUS

1 Year



- 5 Class Degradation
- 4 Class Degradation
- 3 Class Degradation
- 2 Class Degradation
- 1 Class Degradation
- No Change
- 1 Class Improvement
- 2 Class Improvement
- 3 Class Improvement
- 4 Class Improvement
- 5 Class Improvement

October 20, 2020
compared to
October 22, 2019

droughtmonitor.unl.edu

Crop Insurance for Ranchers – Pasture, Rangeland and Forage



OR



Serves
as
Proxy



The Basics

- **Local rainfall** – Insure “local” rainfall over at least 2 month time periods
 - Actual production or rainfall on a farm DOES NOT MATTER!
 - Basis Risk Potential
 - Based upon data starting in 1948
- **Grids** – 17 x 17 mile grids used to identify land
- **Payment triggered** – Whenever rainfall is less than the insured level a payment is made
- **Premium** – Due in September of following year
- **Sign Up** – November 15th

How Rainfall is Determined

- 4 closest reporting stations (NOAA) to center of grid.
- Reporting station closest to center has most effect.
- Reporting station furthest from center of grid has least effect.
- Data from all 4 reporting stations used.

Example Grid



United States Department of Agriculture
Risk Management Agency



Pasture, Rangeland, Forage Support Tool

Grid Locator

Historical Indexes

Decision Support Tool

Estimated Indemnities

Grid Lines

County Lines

Pin Information



Clear All

Zoom to Grid

Find address or place



Current Location

Grid ID: 22573
Latitude: 38.80636°
Longitude: -111.92413°
County: Sevier
State: Utah

[Zoom to](#)

Current Pin Information

Grid ID: 22573
Latitude: 38.80636°
Longitude: -111.92413°
County: Sevier
State: Utah
Address: Sigurd, Utah
84657

1 Grid: 22573



10km
6mi
Esri, HERE, Garmin, NGA, USGS, NPS

Decisions

Acres

- Any amount of acres up to maximum owned/operated

Timing

- Must insure two (non-overlapping) intervals. Each interval is two months

Coverage Level

- 70% to 90%
- Productivity adjustments.

Acres

What is Eligible?

- Grazing land
- Hay (perennial)-dryland
- BLM and Forest Service and State lands

How many acres should be insured?

- As many or as few as desired
- Better coverage versus increased premium cost

Timing and Coverage Levels

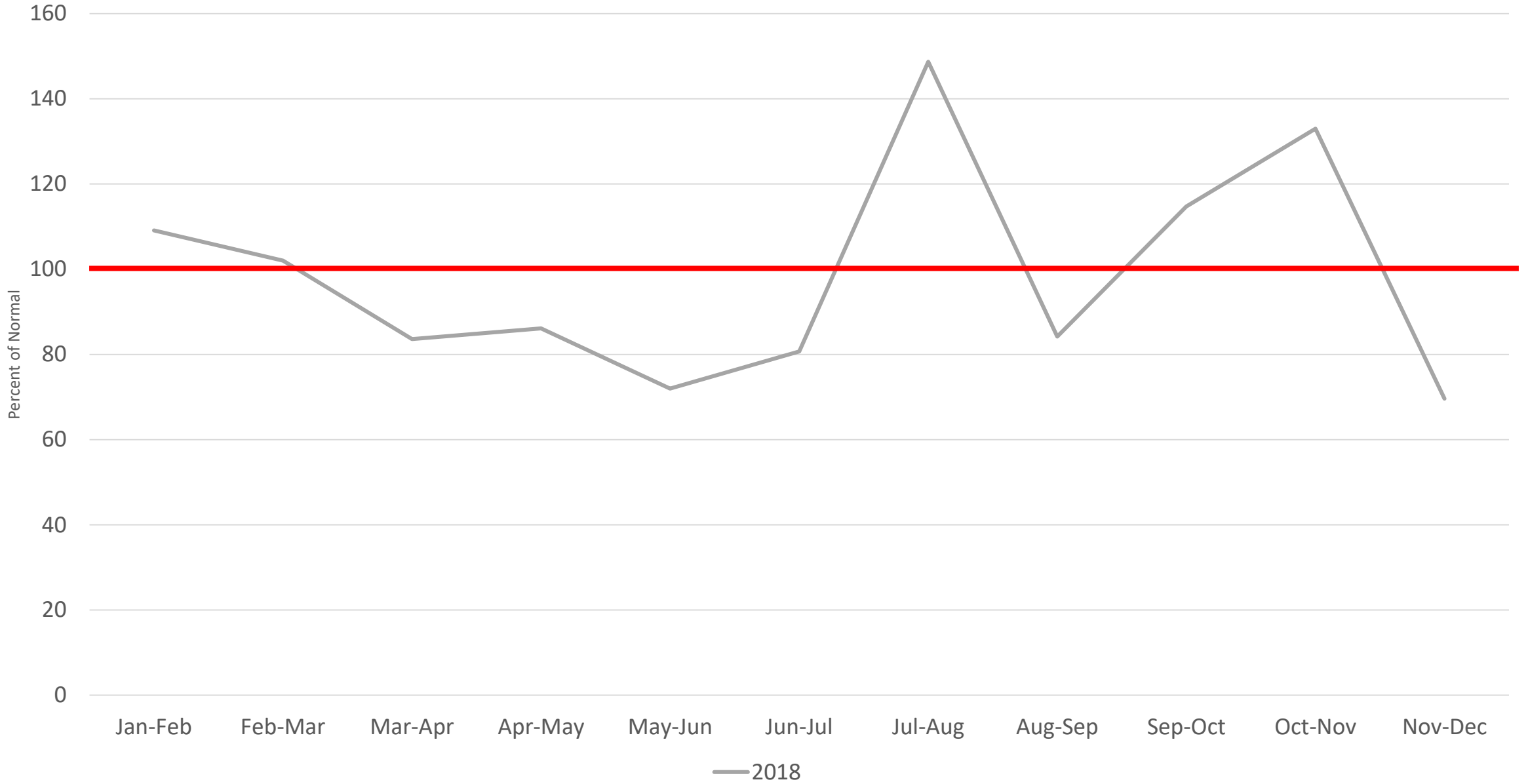
Timing

- Must insure two intervals in the same year
 - Can not insure to adjacent intervals
 - Can not insure more than 60% of their total acreage in any one interval
- Intervals are two month periods (i.e. Jan/Feb or Feb/Mar)

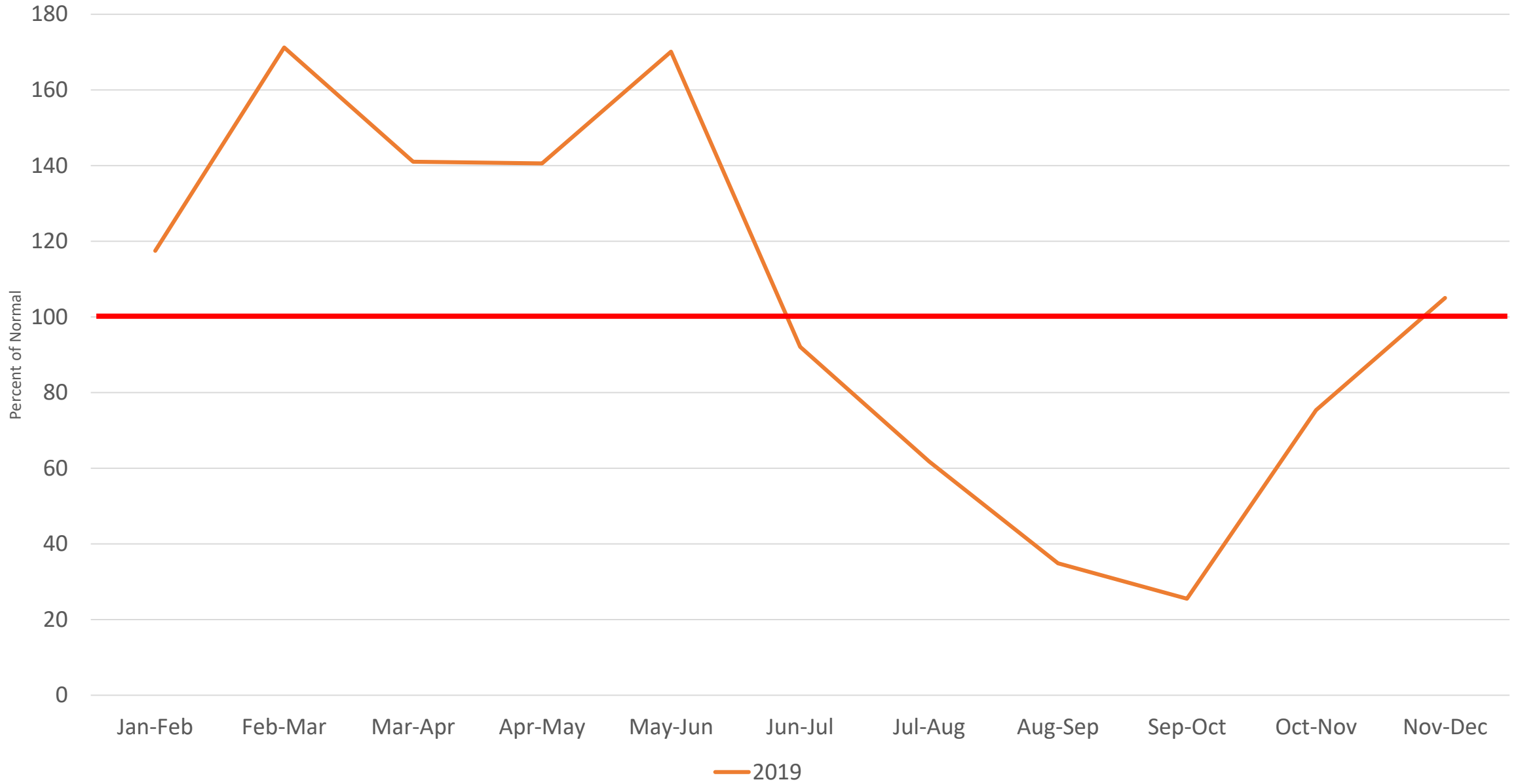
Coverage Levels

- 70, 75, 80, 85, and 90 percent of historical moisture (rainfall or snow)

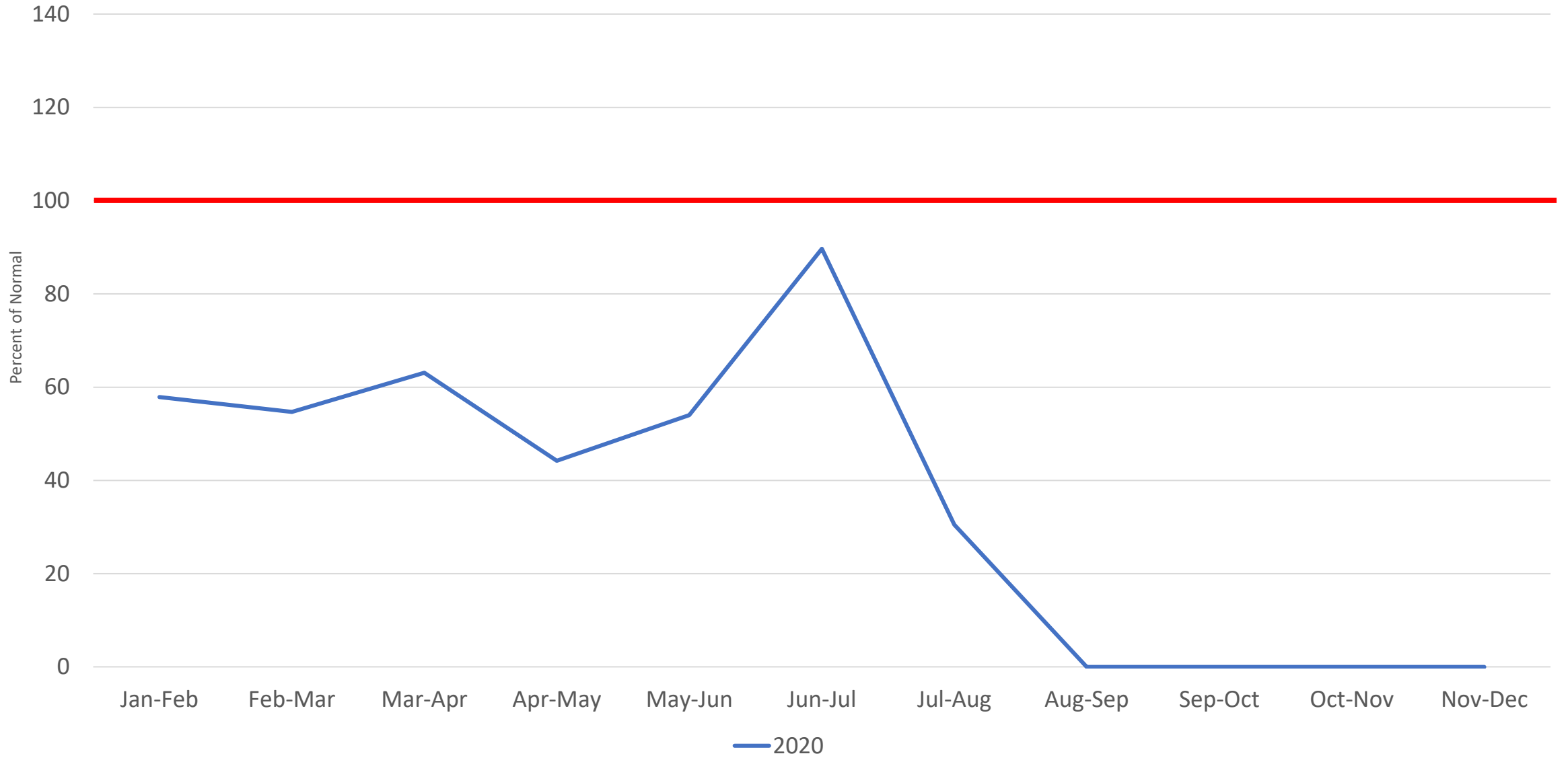
Precipitation Levels-% of Normal



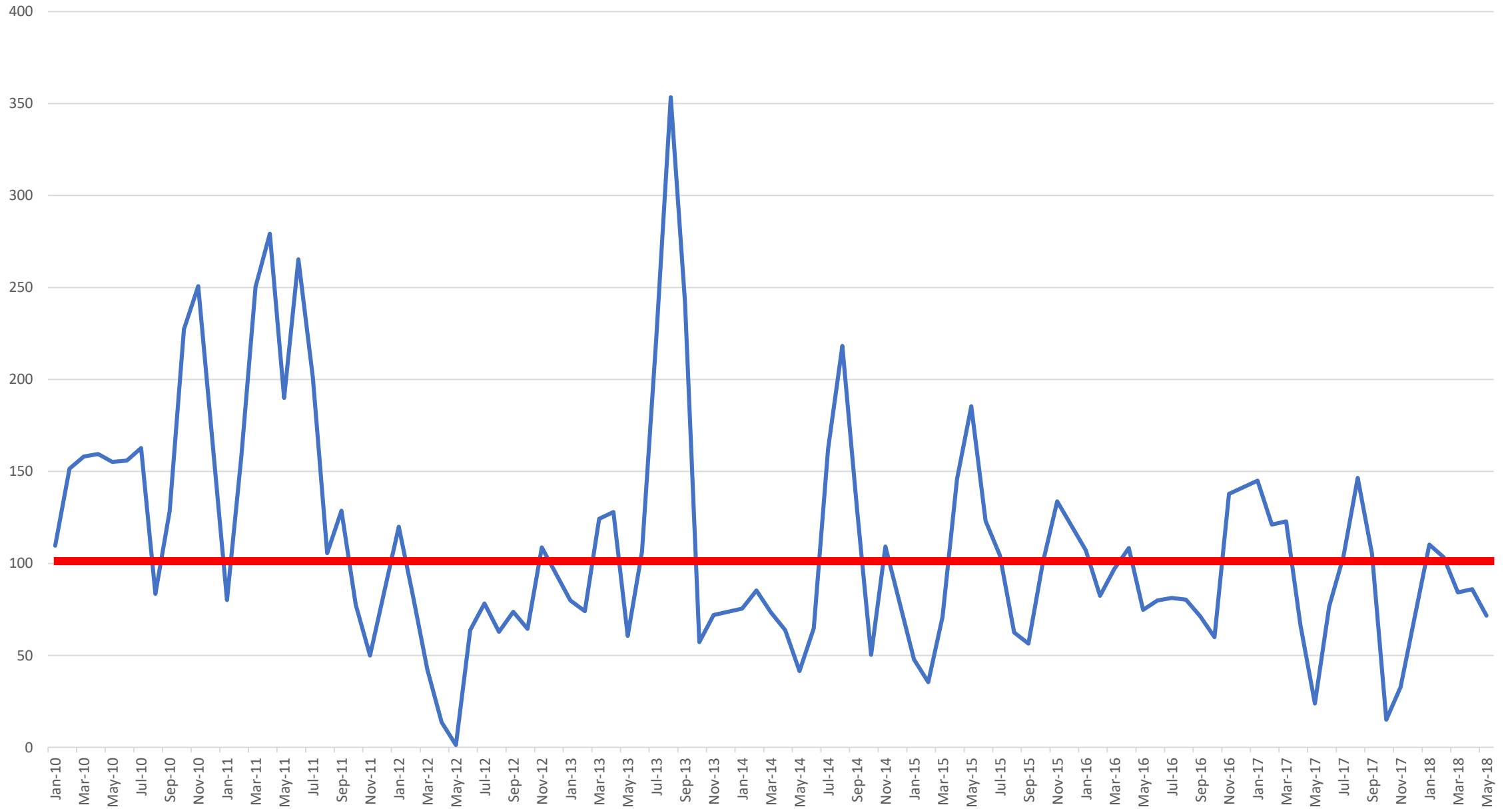
Precipitation Levels-% of Normal



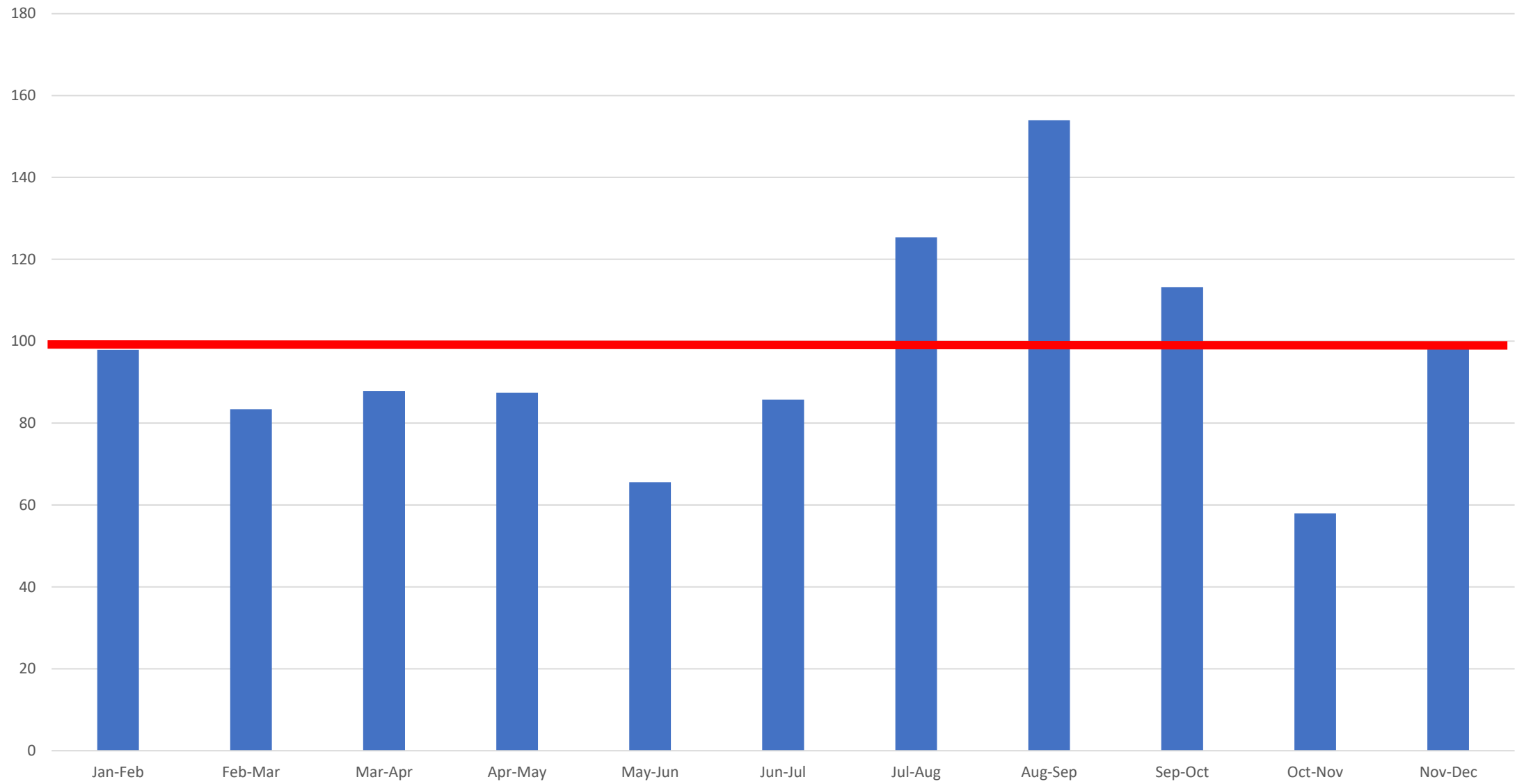
Precipitation Levels-% of Normal



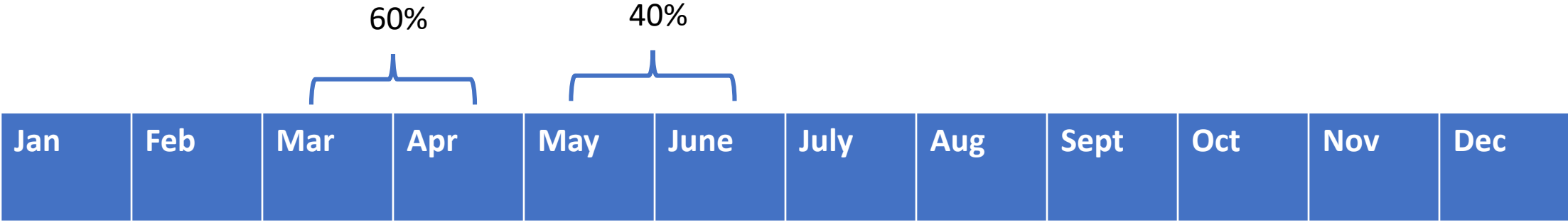
Precipitation Levels



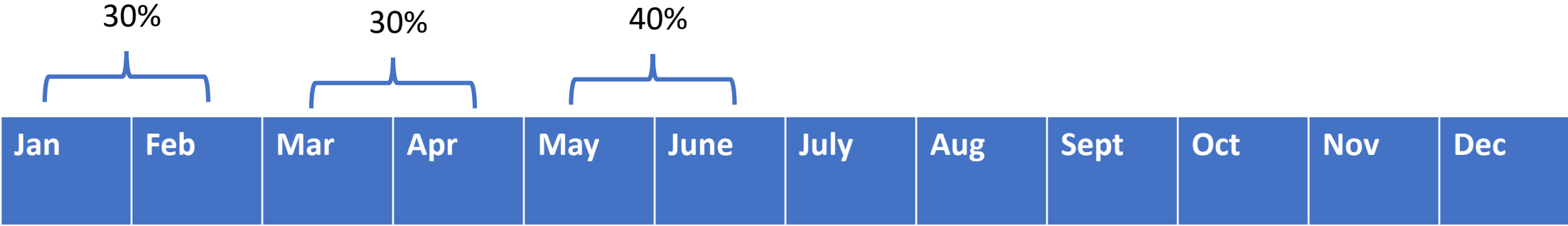
Average



Timing Intervals



Timing Intervals



Livestock Price Risk Tools

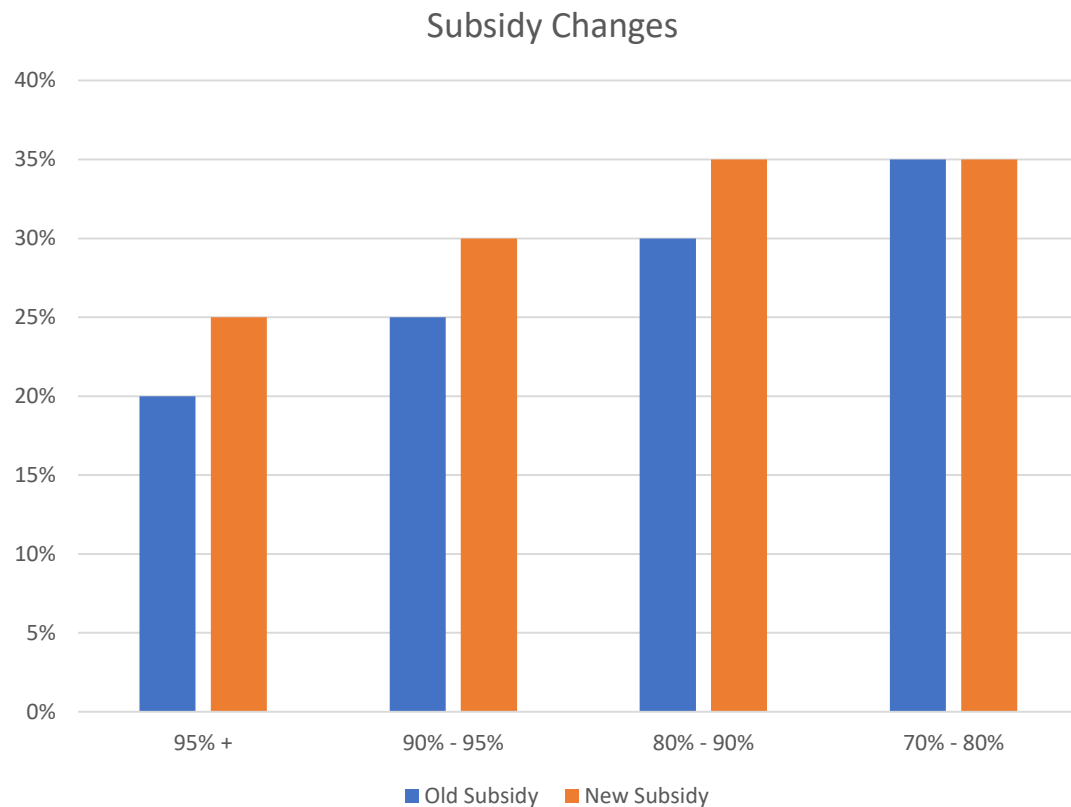
- Livestock Futures and Options
- Revenue Insurance
 - Livestock Revenue Insurance (LRP)
 - Livestock Gross Margin Insurance (LGM)
 - <https://www.rma.usda.gov/Policy-and-Procedure/Insurance-Plans/Livestock-Insurance-Plans>

Livestock Risk Protection



- Price risk insurance coverage for hogs, fed cattle, feeder cattle, and lambs
- Protects against low prices
- 70% to 100% guarantees available for cattle and hogs
- Base on CME futures prices

Livestock Risk Protection



- Coverage is available for up to 52 weeks for cattle
- Similar to a put option
- Premiums are subsidized, the government pays up to 35%

What is LRP?

- Insurance policy that protects livestock producers from unexpected price declines
 - Creates “floor” for price
- Because market futures are a major factor determining available coverage prices, so LRP takes into account “expected” price changes

LRP available for

- Feeder calves (8 different types)
 - Calves, steers, heifers, Braham, or dairy
 - < 600 lbs or 600-900 lbs target weight
- Fed cattle (weighing 1,000 – 1,400 lbs)

LRP – Feeder Cattle

- Available coverage prices range approximately 70-100% of Chicago Mercantile Exchange (CME) futures price
- Policies generally available for the following weekly lengths
13, 17, 21, 26, 30, 34, 39, 43, 47, 52
- Policy Size: 1 to 3,000 head per Specific Coverage Endorsement (SCE)
- 6,000/year maximum (July 1–June 30)

LRP – Fed Cattle

- Available coverage prices range approximately 70-100% of CME futures price
- Policies generally available for the following weekly lengths
13, 17, 21, 26, 30, 34, 39, 43, 47, 52
- Policy Size: 1 to 3,000 head per SCE with 6,000/year maximum

How do I buy LRP?

- 1) File LRP insurance application with a certified agent to establish eligibility in advance

SS#/employer ID, Demonstrate Substantial Beneficial Interest (minimum of 10% ownership of animals)

- 2) Watch available prices & premiums, they change daily, valid from 5 PM to 9 AM next business day

www3.rma.usda.gov/apps/livestock_reports/lrp_select_criteria.cfm

- 3) All coverage periods may not be available due to insufficient market data

- 4) When you like what you see, file a Specific Coverage Endorsement (SCE) with your agent

You must own livestock when filing SCE

Specific Coverage Endorsement (SCE) specifies:

- 1) Actual Coverage Price (chosen price floor)
- 2) Ending Period (date actual price calculated)
- 3) Number (and type) of animals
- 4) Target Weight at ending period
- 5) Premium due (RMA gives 13% subsidy)

RMA may terminate availability at any time (but not the existing policies sold)

LRP Coverage Prices, Rates, and Actual Ending Values - Report for 10/27/2020

* See notes at bottom of page

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
49 Utah	998 All Counties	13	0801 Feeder Cattle	809 Steers Weight 1	201 Endorsement Ending in January Yr1	2021	141.272	\$140.800	0.996700	0.048109	6.774	01/26/2021	
49 Utah	998 All Counties	13	0801 Feeder Cattle	809 Steers Weight 1	201 Endorsement Ending in January Yr1	2021	141.272	\$138.600	0.981100	0.040937	5.674	01/26/2021	
49 Utah	998 All Counties	13	0801 Feeder Cattle	809 Steers Weight 1	201 Endorsement Ending in January Yr1	2021	141.272	\$136.400	0.965500	0.034468	4.701	01/26/2021	
49 Utah	998 All Counties	13	0801 Feeder Cattle	809 Steers Weight 1	201 Endorsement Ending in January Yr1	2021	141.272	\$134.200	0.949900	0.028500	3.825	01/26/2021	
49 Utah	998 All Counties	13	0801 Feeder Cattle	809 Steers Weight 1	201 Endorsement Ending in January Yr1	2021	141.272	\$132.000	0.934400	0.023800	3.142	01/26/2021	
49 Utah	998 All Counties	13	0801 Feeder Cattle	809 Steers Weight 1	201 Endorsement Ending in January Yr1	2021	141.272	\$129.800	0.918800	0.019636	2.549	01/26/2021	
49 Utah	998 All Counties	13	0801 Feeder Cattle	813 Brahman Weight 1	201 Endorsement Ending in January Yr1	2021	128.429	\$128.000	0.996700	0.048109	6.158	01/26/2021	
49 Utah	998 All Counties	13	0801 Feeder Cattle	811 Heifers Weight 1	201 Endorsement Ending in January Yr1	2021	128.429	\$128.000	0.996700	0.048109	6.158	01/26/2021	
49 Utah	998 All Counties	13	0801 Feeder Cattle	810 Steers Weight 2	201 Endorsement Ending in January Yr1	2021	128.429	\$128.000	0.996700	0.048109	6.158	01/26/2021	
49 Utah	998 All Counties	13	0801 Feeder Cattle	809 Steers Weight 1	201 Endorsement Ending in January Yr1	2021	141.272	\$127.600	0.903200	0.016069	2.050	01/26/2021	
49 Utah	998 All Counties	13	0801 Feeder Cattle	813 Brahman Weight 1	201 Endorsement Ending in January Yr1	2021	128.429	\$126.000	0.981100	0.040937	5.158	01/26/2021	
49 Utah	998 All Counties	13	0801 Feeder Cattle	811 Heifers Weight 1	201 Endorsement Ending in January Yr1	2021	128.429	\$126.000	0.981100	0.040937	5.158	01/26/2021	
49 Utah	998 All Counties	13	0801 Feeder Cattle	810 Steers Weight 2	201 Endorsement Ending in January Yr1	2021	128.429	\$126.000	0.981100	0.040937	5.158	01/26/2021	
49 Utah	998 All Counties	13	0801 Feeder Cattle	809 Steers Weight 1	201 Endorsement Ending in January Yr1	2021	141.272	\$125.400	0.887600	0.013132	1.647	01/26/2021	

Feeder Example-2020

Insured value and premium calculations for LRP-Feeder Cattle		
1.	Number of head	100
2.	Target Weight at end date (cwt. Per head)	7.00
3.	Coverage price	\$128.00
4.	Insured Share	100%
5.	Total Insured Value	\$89,600
6.	Rate	0.028612
7.	Total Premium	\$4,317.82
8.	Subsidy Rate	25%
9.	Subsidy	\$1,079.46
10.	Total Premium	\$3,238.37

Feeder Example-2020

1.	Number of head	100
2.	Target Weight at end date (cwt. Per head)	7.00
3.	Coverage price	\$128.00
4.	Actual ending value	\$117.31
5.	Coverage price minus actual ending value	-\$10.69
6.	Insured Share	100%
7.	Total Indemnity	\$7,483

Feeder Example-2020

1.	Number of head	100
2.	Target Weight at end date (cwt. Per head)	7.00
3.	Coverage Indemnity = \$7,483	\$128.00
4.	Actual Premium = \$3,238.37	\$117.31
	Difference = \$4,244.63	
5.	Coverage price minus actual ending value	-\$10.69
6.	Insured Share	100%
7.	Total Indemnity	\$7,483

Nebraska Study

Table 2												
LRP-Feeder Cattle (Heifers Weight 1, < 600 lbs.) Performance												
	8/8/2005	8/7/2006	8/6/2007	8/6/2008	8/6/2009	8/6/2010	8/8/2011	8/6/2012	8/6/2013	8/6/2014	Average	Indemnity Ratio
Expected Ending Value (Nov 5-7)	105.335	115.273	117.336	118.101	101.586	113.395	135.654	141.348	160.211	219.081		
Coverage Price	98.34	108.32	116.01	117.40	99.71	109.90	131.65	122.85	159.54	216.93		
Actual Ending Value (Nov 5-7)	116.06	103.20	108.76	96.59	93.15	111.32	141.97	144.12	164.59	240.36		
Indemnity	0	5.12	7.25	20.81	6.56	0	0	0	0	0	3.97	1.63
Premium	0.70	0.91	2.77	4.06	2.45	1.91	3.03	0.38	3.21	5.01	2.44	
Net Effect	(\$0.70)	\$4.21	\$4.48	\$16.75	\$4.11	(\$1.91)	(\$3.03)	(\$0.38)	(\$3.21)	(\$5.01)	\$1.53	

Source: http://www3.rma.usda.gov/apps/livestock_reports/

Livestock Gross Margin

- A The Livestock Gross Margin for Cattle (LGM for Cattle) Insurance Policy provides protection against the loss of gross margin (market value of livestock minus feeder cattle and feed costs) on cattle.
- The indemnity at the end of the 11-month insurance period is the difference, if positive, between the gross margin guarantee and the actual gross margin.
- The LGM for Cattle Insurance Policy uses futures prices to determine the expected gross margin and the actual gross margin.

Livestock Gross Margin

- Any producer who owns cattle in the states of Colorado, Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Montana, Nebraska, Nevada, North Dakota, Ohio, Oklahoma, South Dakota, Texas, Utah, West Virginia, Wisconsin, and Wyoming is eligible for LGM for Cattle insurance coverage.
- Only cattle sold for commercial or private slaughter primarily intended for human consumption and fed in Colorado, Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Montana, Nebraska, Nevada, North Dakota, Ohio, Oklahoma, South Dakota, Texas, Utah, West Virginia, Wisconsin, and Wyoming are eligible for coverage under the LGM for Cattle Insurance Policy.

Livestock Gross Margin

- A LGM for Cattle covers the difference between the gross margin guarantee and the actual gross margin. LGM for Cattle does not insure against death loss or any other loss or damage to the producer's cattle.
- Gross Margin Guarantee
 - Calculated by subtracting the per head deductible times the total number of cattle to be marketed from the expected total gross margin
- Expected Total Gross Margin
 - Yearling Finishing Operation
 - $(12.50 * \text{LiveCattle}_t) - (7.50 * \text{FeederCattle}_{t-5}) - (50 * \text{Corn}_{t-2})$
 - Calf Finishing Operation
 - $(11.50 * \text{LiveCattle}_t) - (5.50 * \text{FeederCattle}_{t-8}) - (52 * \text{Corn}_{t-4})$

Livestock Gross Margin

- Actual Gross Margin

- Yearling Finishing Operation

- $(12.50 * \text{LiveCattle}_t) - (7.50 * \text{FeederCattle}_{t-5}) - (50 * \text{Corn}_{t-2})$

- Calf Finishing Operation

- $(11.50 * \text{LiveCattle}_t) - (5.50 * \text{FeederCattle}_{t-8}) - (52 * \text{Corn}_{t-4})$

- Actual Prices

- Corn Prices

- Simple average of the daily settlement prices the last three days prior to the contract expiration date. If no contract month, weighted average.

- Feeder cattle price

- Simple average of the daily settlement prices in the last three trading days prior to the contract expiration date,

Livestock Gross Margin

- Indemnities
 - Equal the difference between the gross margin guarantee and actual total gross margin

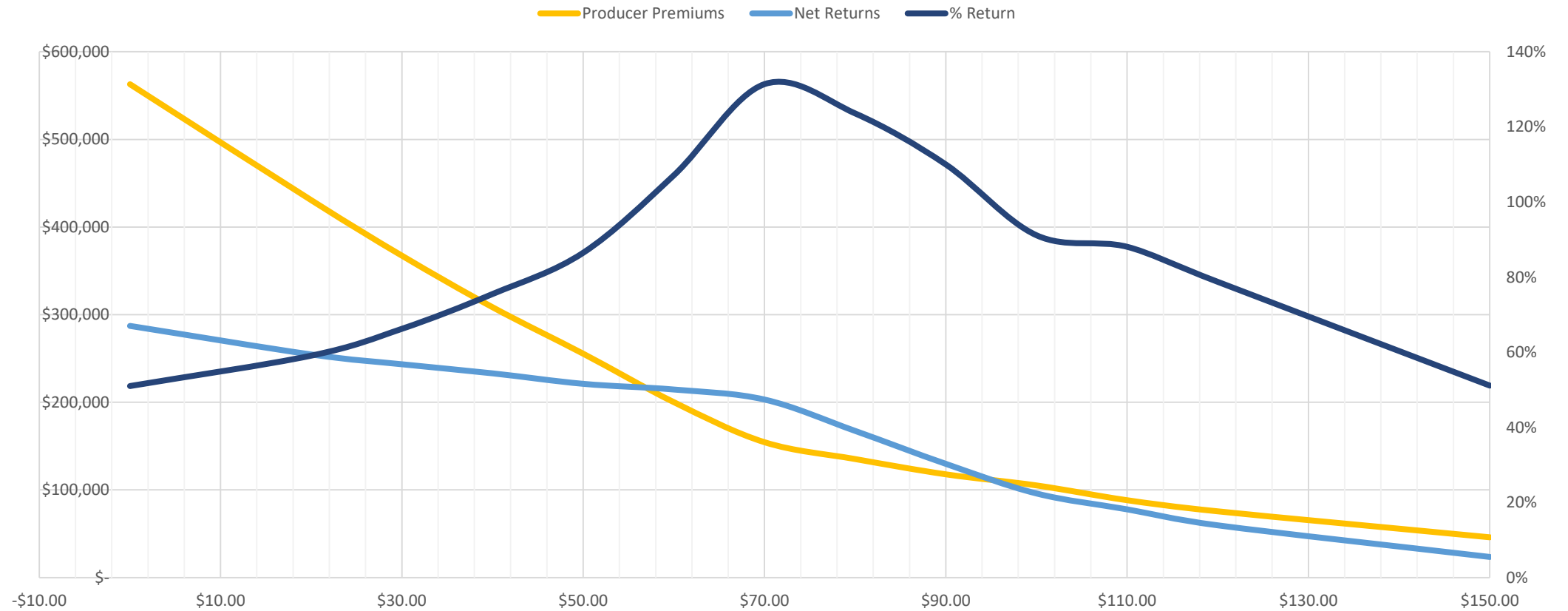
Livestock Gross Margin

Deductible	Indemnities	Premiums	Subsidies	Producer Premiums	Net Returns	Subsidy	% Return
\$0.00	\$850,187.95	\$686,660.00	\$123,598.80	\$563,061.20	\$287,126.75	18%	51%
\$20.00	\$685,252.95	\$559,368.33	\$128,654.72	\$430,713.62	\$254,539.33	23%	59%
\$30.00	\$610,747.95	\$503,277.67	\$135,884.97	\$367,392.70	\$243,355.25	27%	66%
\$40.00	\$541,567.95	\$447,187.00	\$138,627.97	\$308,559.03	\$233,008.92	31%	76%
\$50.00	\$476,567.95	\$399,251.67	\$143,730.60	\$255,521.07	\$221,046.88	36%	87%
\$60.00	\$414,802.95	\$351,316.33	\$151,066.02	\$200,250.31	\$214,552.64	43%	107%
\$70.00	\$357,662.95	\$309,114.00	\$154,557.00	\$154,557.00	\$203,105.95	50%	131%
\$80.00	\$302,662.95	\$270,720.67	\$135,360.33	\$135,360.33	\$167,302.62	50%	124%
\$90.00	\$247,662.95	\$235,876.33	\$117,938.17	\$117,938.17	\$129,724.78	50%	110%
\$100.00	\$201,215.90	\$210,538.03	\$105,269.02	\$105,269.02	\$95,946.88	50%	91%
\$110.00	\$166,215.90	\$176,753.63	\$88,376.82	\$88,376.82	\$77,839.08	50%	88%
\$120.00	\$135,315.90	\$151,415.33	\$75,707.67	\$75,707.67	\$59,608.23	50%	79%
\$150.00	\$69,645.90	\$92,178.67	\$46,089.33	\$46,089.33	\$23,556.57	50%	51%

Livestock Gross Margin

	Indemnity	Premium	Producer Premium	Net Return
2007	\$0.00	\$23,778.00	\$11,889.00	-\$11,889.00
2008	\$25,440.00	\$23,778.00	\$11,889.00	\$13,551.00
2009	\$147,710.00	\$23,778.00	\$11,889.00	\$135,821.00
2010	\$0.00	\$23,778.00	\$11,889.00	-\$11,889.00
2011	\$0.00	\$23,778.00	\$11,889.00	-\$11,889.00
2012	\$67,320.00	\$23,778.00	\$11,889.00	\$55,431.00
2013	\$0.00	\$23,778.00	\$11,889.00	-\$11,889.00
2014	\$0.00	\$23,778.00	\$11,889.00	-\$11,889.00
2015	\$0.00	\$23,778.00	\$11,889.00	-\$11,889.00
2016	\$49,250.00	\$23,778.00	\$11,889.00	\$37,361.00
2017	\$0.00	\$23,778.00	\$11,889.00	-\$11,889.00
2018	\$11,540.00	\$23,778.00	\$11,889.00	-\$349.00
2019	\$56,402.95	\$23,778.00	\$11,889.00	\$44,513.95
Total	\$357,662.95	\$309,114.00	\$154,557.00	\$203,105.95

Livestock Gross Margin



Key Takeaways

- Need to utilize risk management tools-Insurance is one of those key tools
- LRP and LGM are efficient price risk management tools
- <https://www.rma.usda.gov/Policy-and-Procedure/Insurance-Plans/Livestock-Insurance-Plans>

Evaluations

- https://usu.co1.qualtrics.com/jfe/form/SV_a4dKBHSENNzJUtd

