

INSURING AGAINST DROUGHT

Shane Feuz and Dillon M Feuz, PhD

Risk Management Specialists

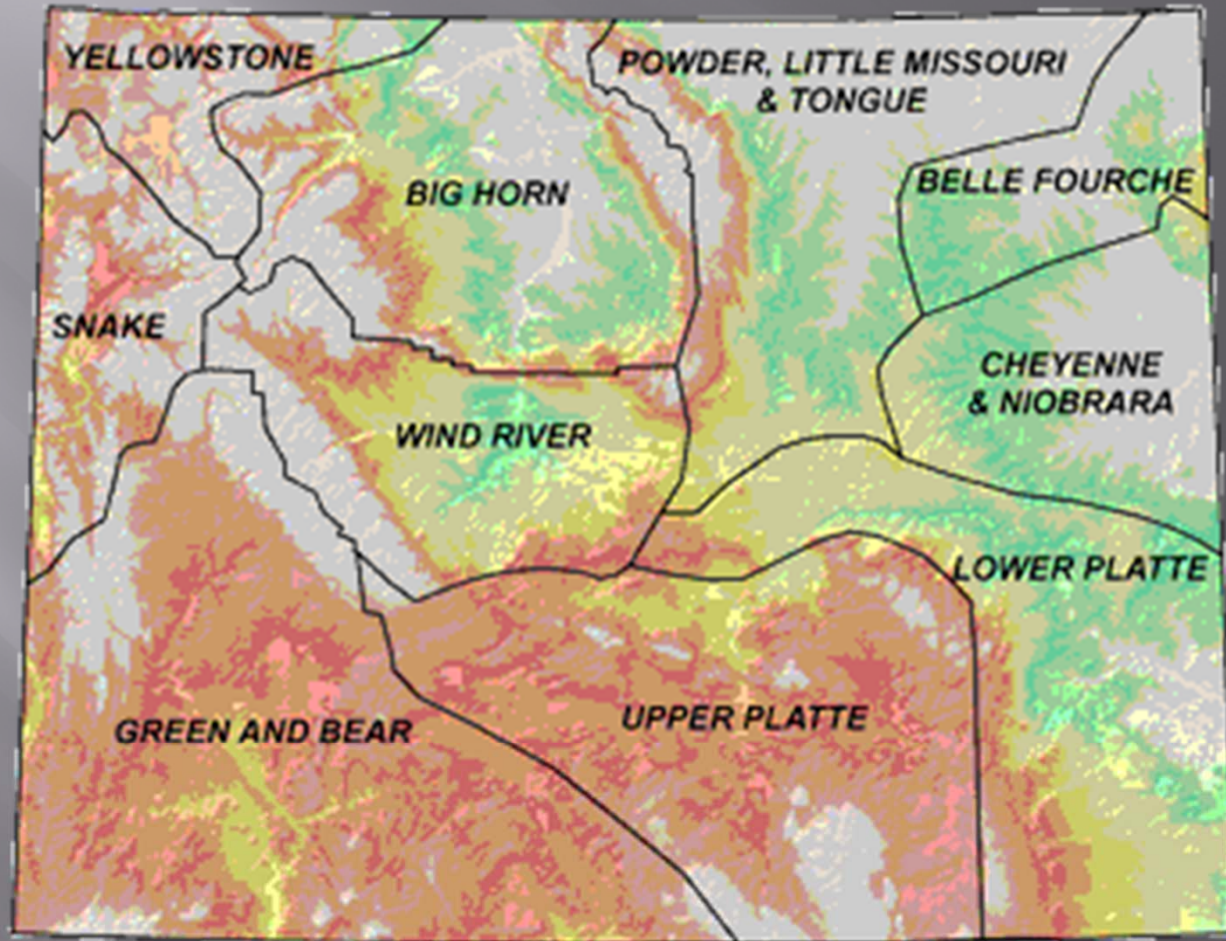
and

John P. Hewlett – University of Wyoming

Drought

- ❑ Period of low precipitation resulting in a water shortage and crop losses.
- ❑ Low precipitation is based on deviations from average precipitation. Therefore, two areas could receive identical precipitation in a year and one be in a drought and one not be, based on the historical average precipitation for each area.
- ❑ Average precipitation is lower than people expect because the better rainfall years are the ones remembered as normal.

Climate Divisions



Drought Frequency

Wyoming Averages		
Classification		%
D0	Abnormally Dry	12.1%
D1	Moderate Drought	13.9%
D2	Severe Drought	4.6%
D3	Extreme Drought	3.1%
D4	Exceptional Drought	1.7%
	D0, D1	26.0%
	D2-D4	9.5%
	Total Drought	35.5%

Data are based on 115 years (1895-2010)

Losses In Drought

Wyoming Average Forage Loss		
Classification		Loss
D0	Abnormally Dry	Up to 10%
D1	Moderate Drought	10%-20%
D2	Severe Drought	20%-30%
D3	Extreme Drought	30%-40%
D4	Exceptional Drought	40%-50%

- ❑ In moderate droughts, calf weaning weights won't really be affected.
- ❑ In the worst droughts, there will be around a 4%-6% loss in calf weights.

Insurance

- ▣ We are going to look at three insurance plans for insuring against drought for livestock producers
 - AGR-Lite
 - NAP
 - Pasture, Rangeland, Forage Pilot

Model Ranches

We will compare the insurance programs using two model cow-calf operations

- 400 head, Western Wyoming, Lincoln County
- 400 head, Eastern Wyoming, Goshen County

AGR-Lite

- ▣ AGR-Adjusted Gross Revenue
- ▣ Insures your gross revenue
 - Based on 5 year average and modified for current year
- ▣ Insures against revenue losses
 - Lighter calf weights from drought
 - Lower market prices
 - Lost revenue from calf death loss

- ▣ Does not insure against events that increase your costs

Fact Sheet

<http://www.rma.usda.gov/pubs/rme/agr-lite.pdf>

Premiums and Total Coverage

Private Grazing, Goshen County
5 yr. Average Revenue \$235,000

Total Coverage		
	Payment Rate	
Coverage Level	75%	90%
65%	\$114,300.81	\$137,160.97
75%	\$131,885.55	\$158,262.66

Premiums		
	Payment Rate	
Coverage Level	75%	90%
65%	\$ 4,388.29	\$ 5,259.95
75%	\$ 8,516.84	\$ 10,214.20

RMA Premium Calculator

<http://www3.rma.usda.gov/apps/premcalc/>

Premiums and Total Coverage

Public Grazing, Lincoln County
5 yr. Average Revenue \$224,800

Total Coverage		
	Payment Rate	
Coverage Level	75%	90%
65%	\$109,603.46	\$131,524.15
75%	\$126,465.53	\$151,758.63

Premiums		
	Payment Rate	
Coverage Level	75%	90%
65%	\$ 4,209.18	\$ 5,045.02
75%	\$ 8,168.06	\$ 9,795.67

RMA Premium Calculator

<http://www3.rma.usda.gov/apps/premcalc/>

Payouts

- ▣ Based on our model ranch budgets, the 6% loss in calf weights, when forage is reduced by 50% from drought, is not enough to trigger any payments from AGR-Lite.
 - Producers would likely have increased purchased feed costs, but this is not insurable with this policy.

- ▣ AGR-Lite may be useful for other commodities, but for a straight cow-calf operation, it does not appear that it is a viable insurance product to insure against revenue losses that may occur due to drought.

NAP

Non-insured Crop Disaster Assistance Program

- ▣ NAP is purchased at USDA-Farm Service Agency, not from Crop Insurance Agents
- ▣ \$250 per crop per year with a \$750 limit per farm.
- ▣ Only receive payments if there is worse than a 50% loss of the insured crop.
- ▣ Based on the Wyoming drought data, it is not a good option for range and pasture insurance.
- ▣ **HOWEVER**, purchase of NAP qualifies you for any federal disaster assistance.
 - From that standpoint, \$250 is very cheap insurance.

PRF Insurance

Pasture, Rangeland, Forage

- ▣ Vegetation Index program for Wyoming
- ▣ Coverage is based on vegetation losses within a 4.8 x 4.8 mile grid, not on individual producer losses
- ▣ Covers one or more 3 month time periods.
 - Ex. 600 acres covered from Apr-Jun and 600 acres covered from Jul-Sep

Fact Sheet

<http://www.rma.usda.gov/pubs/rme/vegetation.pdf>

PRF

Premiums and Total Coverage

Goshen County Grid ID 77127

Total Coverage				
	Protection Rate			
Coverage Level	75%	100%	125%	150%
70%	\$ 6,686.00	\$ 8,916.00	\$ 11,144.00	\$13,372.00
80%	\$ 3,821.00	\$ 10,188.00	\$ 12,736.00	\$15,284.00
90%	\$ 8,596.00	\$ 11,462.00	\$ 14,328.00	\$17,194.00

Premiums				
	Protection Rate			
Coverage Level	75%	100%	125%	150%
70%	\$ 302.00	\$ 403.00	\$ 503.00	\$ 604.00
80%	\$ 504.00	\$ 672.00	\$ 840.00	\$ 1,008.00
90%	\$ 792.00	\$ 1,057.00	\$ 1,321.00	\$ 1,585.00

<http://agforceusa.com/rma/vi/prf/dst>

Premiums and Total Coverage

Lincoln County Grid ID 72469

Total Coverage				
	Protection Rate			
Coverage Level	75%	100%	125%	150%
70%	\$ 12,995.00	\$ 17,326.00	\$ 21,658.00	\$ 25,990.00
80%	\$ 14,851.00	\$ 19,802.00	\$ 24,752.00	\$ 29,702.00
90%	\$ 16,708.00	\$ 22,277.00	\$ 27,846.00	\$ 33,415.00

Premiums				
	Protection Rate			
Coverage Level	75%	100%	125%	150%
70%	\$ 415.00	\$ 553.00	\$ 691.00	\$ 829.00
80%	\$ 722.00	\$ 962.00	\$ 1,203.00	\$ 1,444.00
90%	\$ 1,224.00	\$ 1,632.00	\$ 2,040.00	\$ 2,448.00

<http://agforceusa.com/rma/vi/prf/dst>

Historical Payouts

Goshen County Grid ID 77127

Total Premiums Since 1989				
	Protection Rate			
Coverage Level	75%	100%	125%	150%
70%	\$ 6,644.00	\$ 8,866.00	\$ 11,066.00	\$ 13,288.00
80%	\$ 11,088.00	\$ 14,784.00	\$ 18,480.00	\$ 22,176.00
90%	\$ 17,424.00	\$ 23,254.00	\$ 29,062.00	\$ 34,870.00

Total Payouts Since 1989				
	Protection Rate			
Coverage Level	75%	100%	125%	150%
70%	\$ 20,424.00	\$ 27,234.40	\$ 34,044.80	\$ 40,855.20
80%	\$ 27,410.40	\$ 36,559.20	\$ 45,697.60	\$ 54,835.20
90%	\$ 35,463.20	\$ 47,277.60	\$ 59,104.00	\$ 70,929.60

Decision Support Tool

<http://agforceusa.com/rma/vi/prf/dst>

Historical Payouts

Lincoln County Grid ID 72469

Total Premiums Since 1989				
	Protection Rate			
Coverage Level	75%	100%	125%	150%
70%	\$ 9,130.00	\$ 12,166.00	\$ 15,202.00	\$ 18,238.00
80%	\$ 15,884.00	\$ 21,164.00	\$ 26,466.00	\$ 31,768.00
90%	\$ 26,928.00	\$ 35,904.00	\$ 44,880.00	\$ 53,856.00

Total Payouts Since 1989				
	Protection Rate			
Coverage Level	75%	100%	125%	150%
70%	\$ 36,873.20	\$ 49,159.60	\$ 61,454.40	\$ 73,746.40
80%	\$ 54,504.80	\$ 72,674.00	\$ 90,834.80	\$ 109,006.80
90%	\$ 72,371.60	\$ 96,496.40	\$ 120,618.40	\$ 144,743.20

Decision Support Tool

<http://agforceusa.com/rma/vi/prf/dst>

PRF Insurance Summary

- ▣ At present levels of premiums paid by producers (remember, these are government subsidized premiums), the expected payout from the insurance exceeds the premium costs.
- ▣ This insurance product seems very beneficial to use to insure against drought on Wyoming range and pasture land.

The Insurance Products are not mutually exclusive

- ▣ Producers can purchase all three insurance products, AGR-Lite, NAP and PRF.
- ▣ The PRF insurance would pay first and any indemnity would count against your AGR-Lite guarantee.
- ▣ NAP and PRF can be carried on the same piece of land and a producer can receive an indemnity from both.

Conclusion

- ▣ Pasture, Rangeland, and Forage (PRF) insurance appears very effective in insuring against drought in Wyoming ranges and pastures.
 - The 70% coverage level appears to offer the highest return per premium dollar spent
- ▣ NAP is a fairly inexpensive insurance that qualifies you for disaster payments, should they become available
 - Rarely pays off as an actual insurance product
- ▣ AGR-Lite was not an effective insurance product to insure against revenue losses resulting from a drought on our two model cow-calf ranches.

Questions

