



Dyson
Cornell
SC Johnson College of Business

Cornell **CALS**
College of Agriculture and Life Sciences

Pasture, Range, and Forage Crop Insurance

agriskmanagement.cornell.edu



“It’s farming, so it’s not easy that’s for sure. The weather and the changing variability in the weather in recent years has been a real challenge, with wet to dry extremes”

-NY organic grain farmer in 2016 testimonial for NYSDAM



Why have crop insurance for pasture and forage?

- **Farms face drought as well as many other things that can go wrong**
 - Farms either self insure or use available crop insurance products
- **Self insurance strategies and drought costs**
 - Produce more forage or hold more pasture than needed
 - Production and storage costs incurred, some areas facing increasing land prices which make this strategy potentially more costly
 - Purchase hay
 - If drought occurs, prices may go up as well
 - Loss of custom grazing income
 - In worst case, may have to cull animals or decrease herd size
- **PRF is a crop insurance product designed to help farms facing the consequences of low hay or pasture yields due to low rainfall**

PRF Index Insurance - Introduction

- PRF insures livestock growers against lack of precipitation (rain or snow) relative to historic levels
- Using a grid system, USDA tracks precipitation in an area, and sends payments automatically when levels are low
- Enables producers to buy feed when forage is limited
- No record keeping required!
- Important consideration: if you experience low rainfall in your fields but the grid rainfall levels are different, there is a chance you may not receive an indemnity.



Photo taken mid-July, 2016

Source: The Buffalo News, available at <http://buffalonews.com/2016/07/22/worst-drought-since-1943-plagues-western-new-york/>

PRF Rainfall Index Insurance

Things to know...

- Available in all NY counties!
- Important Dates:
 - Nov. 15: Sales closing, cancellation, acreage reporting date
 - Aug. 31: Contract change date
 - Sept. 1: Premium billing date
 - Nov. 15: Termination date
 - Dec. 31: End of insurance date
- The sales closing date for 2018 PRF has already passed (Nov. 15, 2017,) but you may still find a PRF policy is useful in future years.

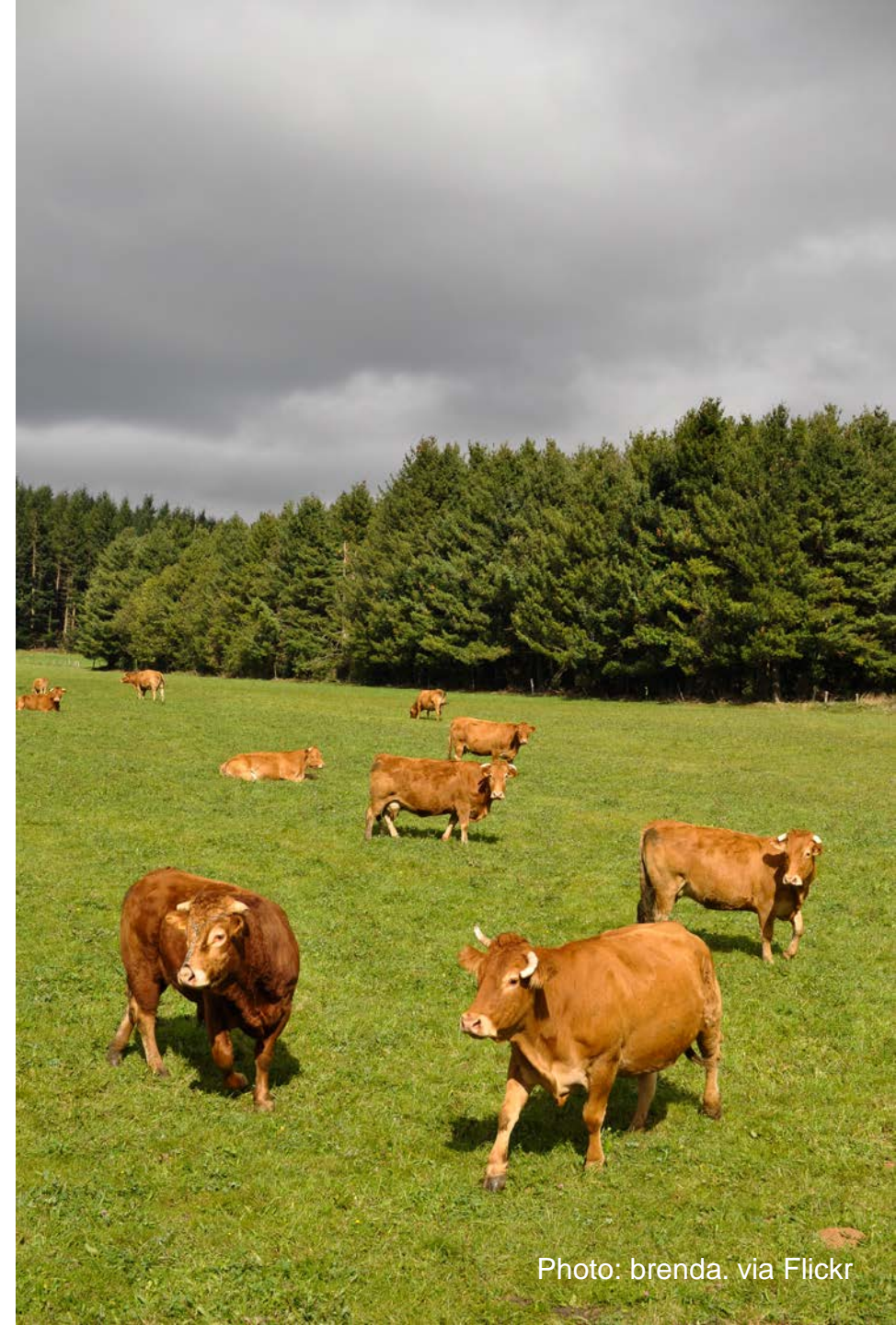
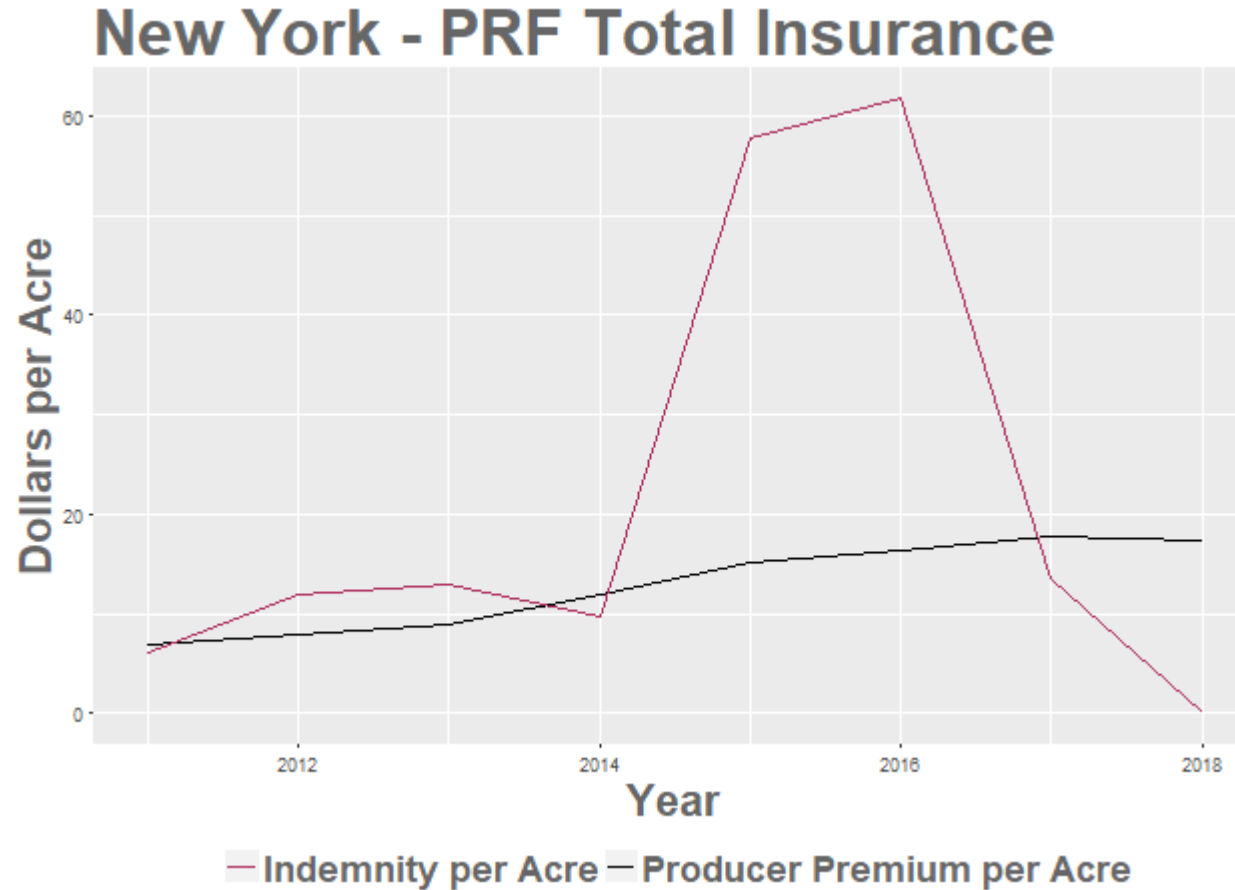


Photo: brenda. via Flickr

PRF Rainfall Index Insurance

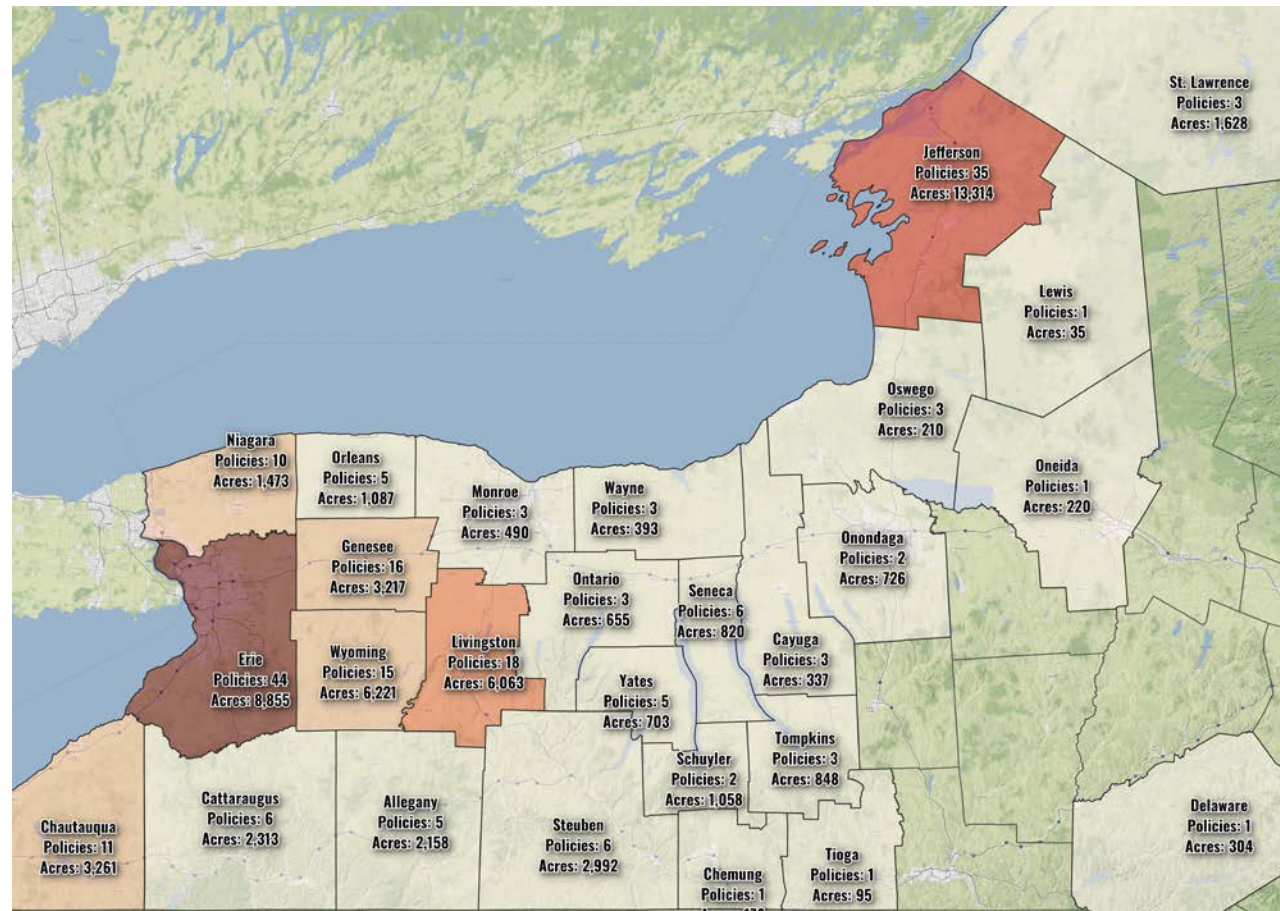
2017 New York Participation



As of January 7, 2018 (there may still be more 2017 indemnity payments)

PRF Rainfall Index Insurance

2017 New York Participation



(Additionally: Orange Co. – 1 policy, 50 acres and Suffolk Co. – 1 policy, 100 acres)

Program background

What lead to PRF development?

- There is a lack of actual producer/industry production data.
- There is no consistent or sound methodology for measuring production levels/yields.
- But there is a correlation between rainfall and forage production.
 - When rainfall declines, forage production often also declines.
- Thus, the change from long-term average or normal precipitation is used to establish an index of forage production.

Rainfall index based on NOAA data

NOAA – National Oceanic and Atmospheric Administration

- Well trusted, government agency that serves as a dependable third-party data source.
 - NOAA has no conflict of interest in providing the data the PRF index is based on.
- Reports and publicly publishes precipitation data.
- Serves as a widely used source of precipitation information.
- Long data history – since 1948
 - Because this a long and consistent data-set, it can be used to determine what “normal” precipitation amounts are for any time of year.



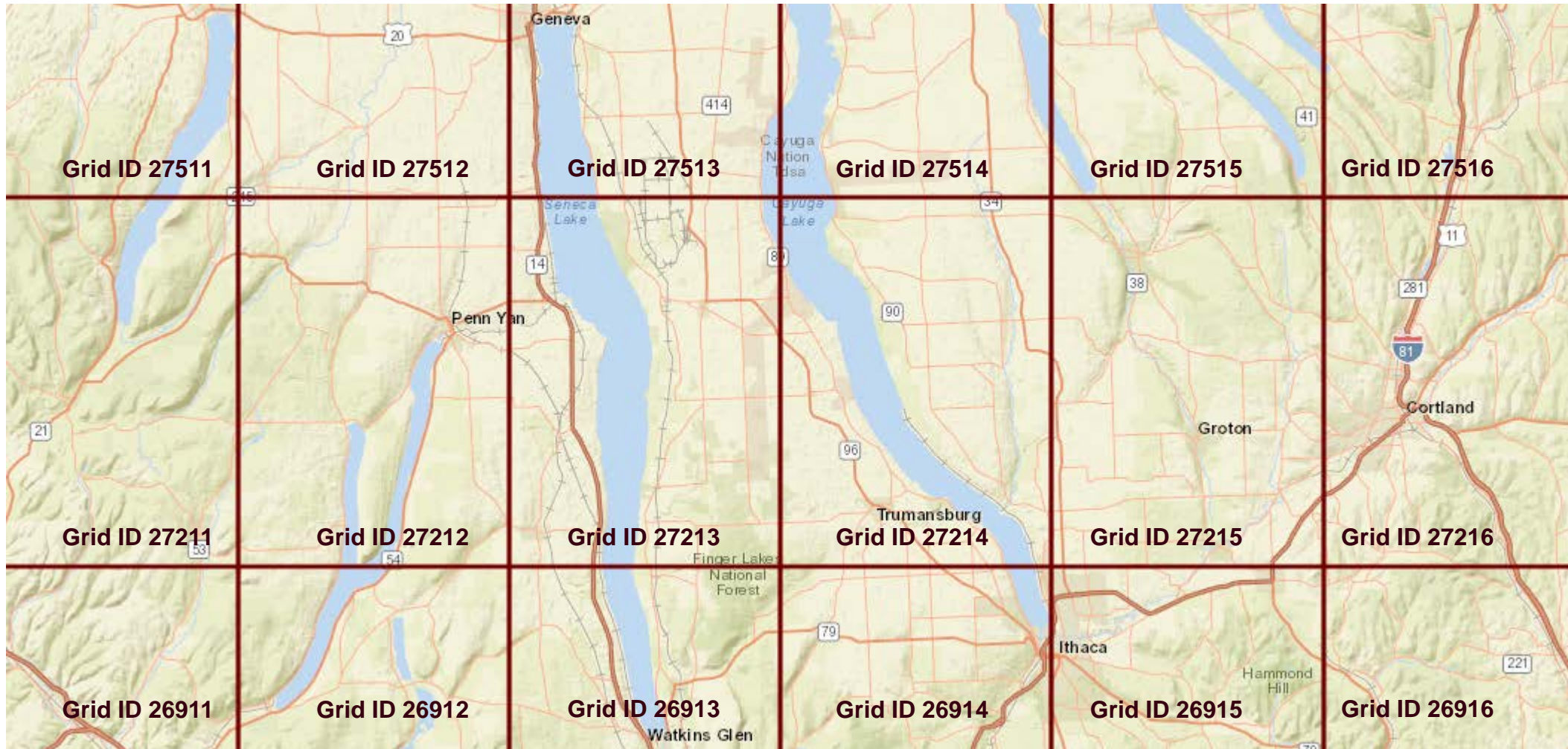
Rainfall Index Details

What lead to PRF development?

- A rainfall index is used as a “proxy” indicator of the amount of forage production on pasture/grazing land and hayland.
- A rainfall index is constructed for each approximately 12 square mile grid in the state for 11 separate two month “index intervals”
 - Index value of 100 represents average rainfall
 - Anything below an index value of 100 is below average precipitation (dry conditions) and anything above an index value of 100 is above average precipitation (wet conditions)
- The size of each grid is determined by how the National Oceanic and Atmospheric Administration (NOAA) reports rainfall data in the United States.

PRF Grid

Gridsquares in New York





PRF Rainfall Index Insurance

- A **Group Risk Program** that provides insurance against reductions in the rainfall index below its average value for each insurance or “grid” area in the insured index intervals.
- Producers need to recognize that **it is possible for them to have low forage production on insured acreage and still not receive a payment** under this group risk plan.
 - Can potentially happen when farm-level rainfall differs from grid-level rainfall
 - Historical rainfall index values for each grid can be viewed at: <http://maps.agforceusa.com/prf/ri/>
- The federal government shares in the cost of the actuarially fair insurance premiums.



PRF Rainfall Index Insurance – Index Intervals

At least 2-month intervals must be selected (highlighted in yellow)

Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Yellow	Yellow										
	Yellow	Yellow									
		Yellow	Yellow								
			Yellow	Yellow							
				Yellow	Yellow						
					Yellow	Yellow					
						Yellow	Yellow				
							Yellow	Yellow			
								Yellow	Yellow		
									Yellow	Yellow	
										Yellow	Yellow

PRF Rainfall Index Insurance – Percent of Value

- Each index interval selected is assigned a “percent of value” of at least 10% and no greater than 70%.
- Percent of value selected for all intervals must sum to 100.

Grid ID	Index Interval	Percent of value
Grid 1 100 acres insured	Mar-Apr	50%
	Jun-Jul	50%
	Total	100%
Grid 2 100 acres insured	Mar-Apr	40%
	May-Jun	50%
	Jul-Aug	10%
	Total	100%



PRF Rainfall Index Insurance

- Pasture & hayland have different “base values”.
 - Determined using grazing and hay land values on a per county basis.
 - The base value for Cayuga Co. hayland is \$318 (non-irrigated) and for pasture is \$74.40
- A producer may believe that the value of forage production on the insured area is similar to the county base value.
 - A **coverage level** of 90% and a **protection factor** of 110% would provide coverage approximately equal to the county base value.
- As coverage levels increase, frequency of loss (indemnities) increases
 - Premiums also increase
- Indemnity payment triggered when the index value falls below 100 minus deductible in each index interval which the producer selected.
 - For example, with a 10% deductible, indemnities are triggered with the index drops below 90% (effectively a 90% coverage level)

PRF Rainfall Index Insurance – Forage Production Example

Contract Data	Selected Value	Procedure
County Base Value (CBV)	\$318	Established by RMA.
Productivity Factor (PF)	110%	Producer selects 60 to 150% of the county base value
Coverage Level (CL)	90%	Producer selects 70, 75, 80, 85 or 90 percent.
Dollar Amount of Protection Per Acre	\$314.82	$\$318 \times 1.10 \times 0.90$ (CBV x CL x PF)
Grid # 26612 Mar-Apr Interval Jun-Jul Interval	100 acres * 50% 100 acres* 50%	Total Acres insured =100, percent of value selected for each interval is 50%
Unit Protection Mar-Apr Interval Jun-Jul Interval	\$15,741/unit \$15,741/unit	$\$314.82/\text{acre} \times 50 \text{ acres} \times 100\%$ insured share in each interval

Example premium estimate for Cayuga County Grid ID 27514 under these selections for 2018: ~\$6/acre for Mar-Apr Interval, ~\$9/acre for Jun-Jul Interval

PRF Rainfall Index Insurance – Forage Production Example

- No Indemnity payment for the Mar-Apr Interval because the Final Grid Index (110) was greater than the coverage level/Trigger Grid Index (90)
- Final Grid Index of 60 due to low rainfall during the Jun-Jul Interval means an indemnity will be paid
 - The payment calculation factor (PCF) for the Jun-Jul Interval is determined subtracting the Final Grid Index of from the Trigger Index and dividing the difference by the Trigger Index
 - $PCF = [\text{Trigger Grid Index} - \text{Final Grid Index}] / \text{Trigger Grid Index}$.

$$(90 - 60) / 90 = 0.333$$

- Policy Protection X PCF = Indemnity Payment

$$\$15,741 \times 0.333 = \$5,195$$



Indemnity Payments – Key Points

- No information about forage yields has to be provided by producers.
- Final Grid Indexes are available approximately 2 months after the period/interval.
- Indemnity payments are usually made 4 months after the end of the index interval.
 - If you have 90% coverage and rainfall fell below 90% of the grid index, an indemnity will be triggered

For More Information

Having a good relationship with your agent is critical. There are many deadlines and specific procedures to be followed when making a claim!

Find a crop insurance agent at:

- www.rma.usda.gov/tools/agent.html

Crop insurance information at:

- agriskmanagement.cornell.edu

Cornell Crop Insurance & Risk Management Education Project Resources Website: agriskmanagement.cornell.edu

Currently available

- Newly updated website including
 - Articles
 - Fact sheets
 - Presentations
 - Videos
 - Farmer testimonials

Coming soon

- Risk management podcast series
- More NY case studies
- More fact sheets
- Whole Farm Revenue Protection examples

Cornell University delivers crop insurance education in New York State in partnership with the USDA Risk Management Agency.

Diversity and Inclusion are a part of Cornell University's heritage. We are an employer and educator recognized for valuing AA/EEO, Protected Veterans, and Individuals with Disabilities.



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