

# The Effect of the Drought on Food Prices and Availability

Agricultural Outlook Forum 2013: Managing Risk in the 21<sup>st</sup> Century

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## Outline

- Drought and Effect on Crop and Livestock Production
- Farm Price Impact on Consumer Expenditures
- Policies Providing a Farm Safety-Net



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## Ripped from the Headlines \*\*\*

- *Why Iowa's drought is a global problem*  
*CNN Money.com – August 9, 2012*
- *Severe Drought Seen as Driving Cost of Food Up*  
*NY Times.com – July 25, 2012*
- *Historic drought to bring higher food prices, experts say*  
*Fox News.Com – July 17, 2012*

\*\*\* The July WASDE was released on 7/11/12 and the August WASDE on 8/10/12

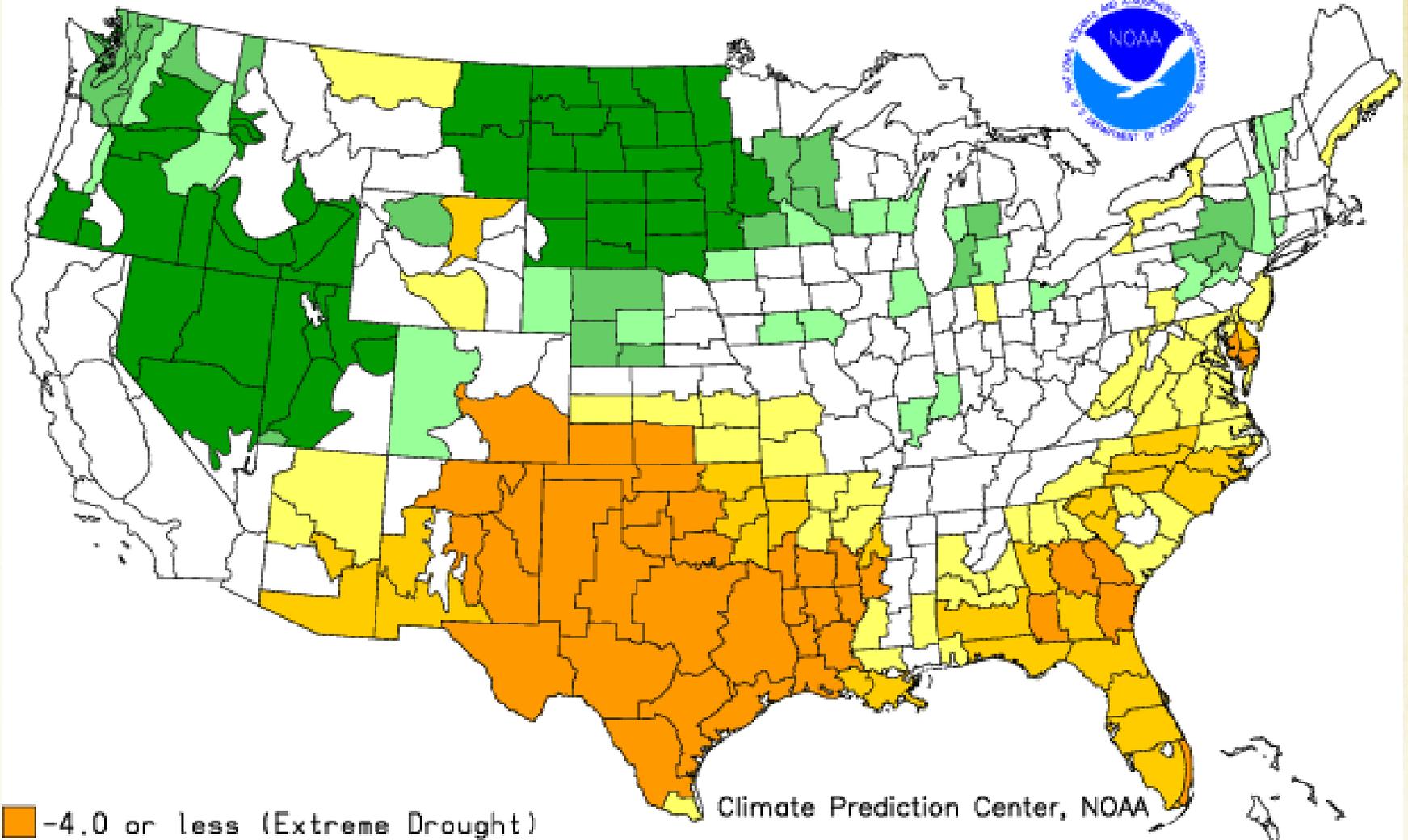


## For Some States, 2013 could be the **Third Consecutive Drought Year**



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Drought Severity Index by Division  
Weekly Value for Period Ending AUG 6, 2011  
Long Term Palmer

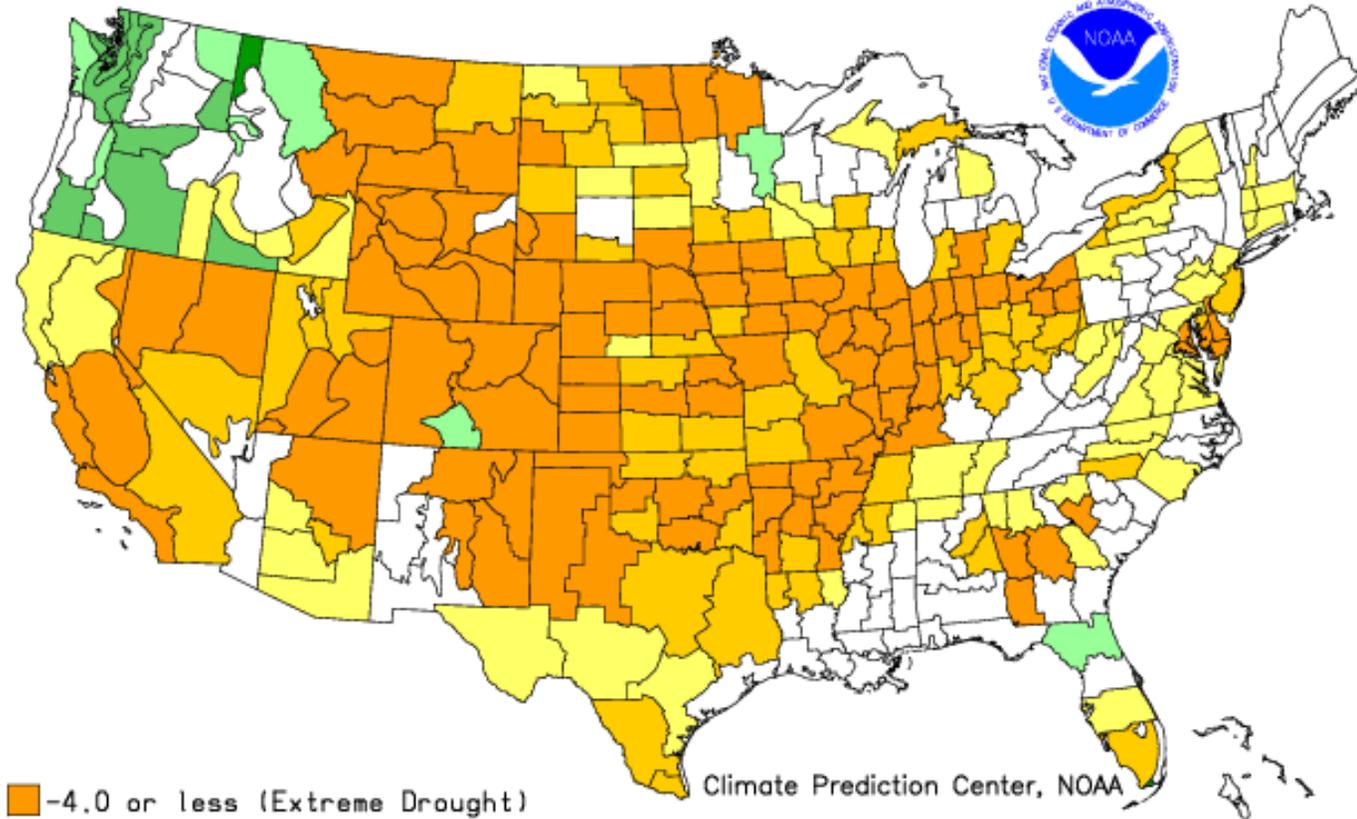


-  -4.0 or less (Extreme Drought)
-  -3.0 to -3.9 (Severe Drought)
-  -2.0 to -2.9 (Moderate Drought)
-  -1.9 to +1.9 (Near Normal)

-  +2.0 to +2.9 (Unusual Moist Spell)
-  +3.0 to +3.9 (Very Moist Spell)
-  +4.0 and above (Extremely Moist)

Climate Prediction Center, NOAA

Drought Severity Index by Division  
Weekly Value for Period Ending AUG 4, 2012  
Long Term Palmer

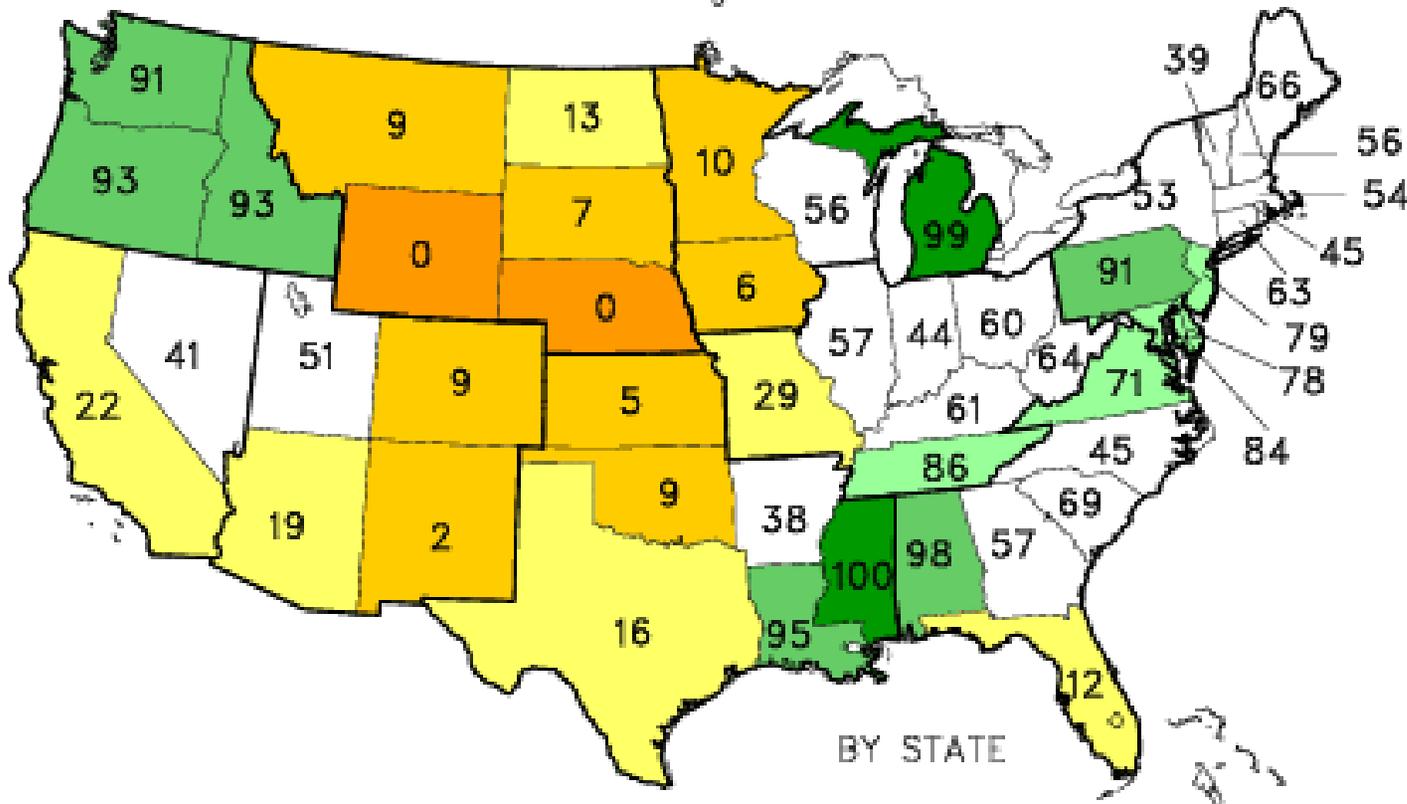


- Climate Prediction Center, NOAA
- |               |                                 |              |                                    |
|---------------|---------------------------------|--------------|------------------------------------|
| Orange        | -4.0 or less (Extreme Drought)  | Light Green  | +2.0 to +2.9 (Unusual Moist Spell) |
| Yellow-Orange | -3.0 to -3.9 (Severe Drought)   | Medium Green | +3.0 to +3.9 (Very Moist Spell)    |
| Yellow        | -2.0 to -2.9 (Moderate Drought) | Dark Green   | +4.0 and above (Extremely Moist)   |
| White         | -1.9 to +1.9 (Near Normal)      |              |                                    |

# PALMER DROUGHT INDEX PERCENTILES

Weekly Value for Period Ending 16 FEB 2013

Records Began In 1895



\* Wyoming and Nebraska facing worst drought in 117 years





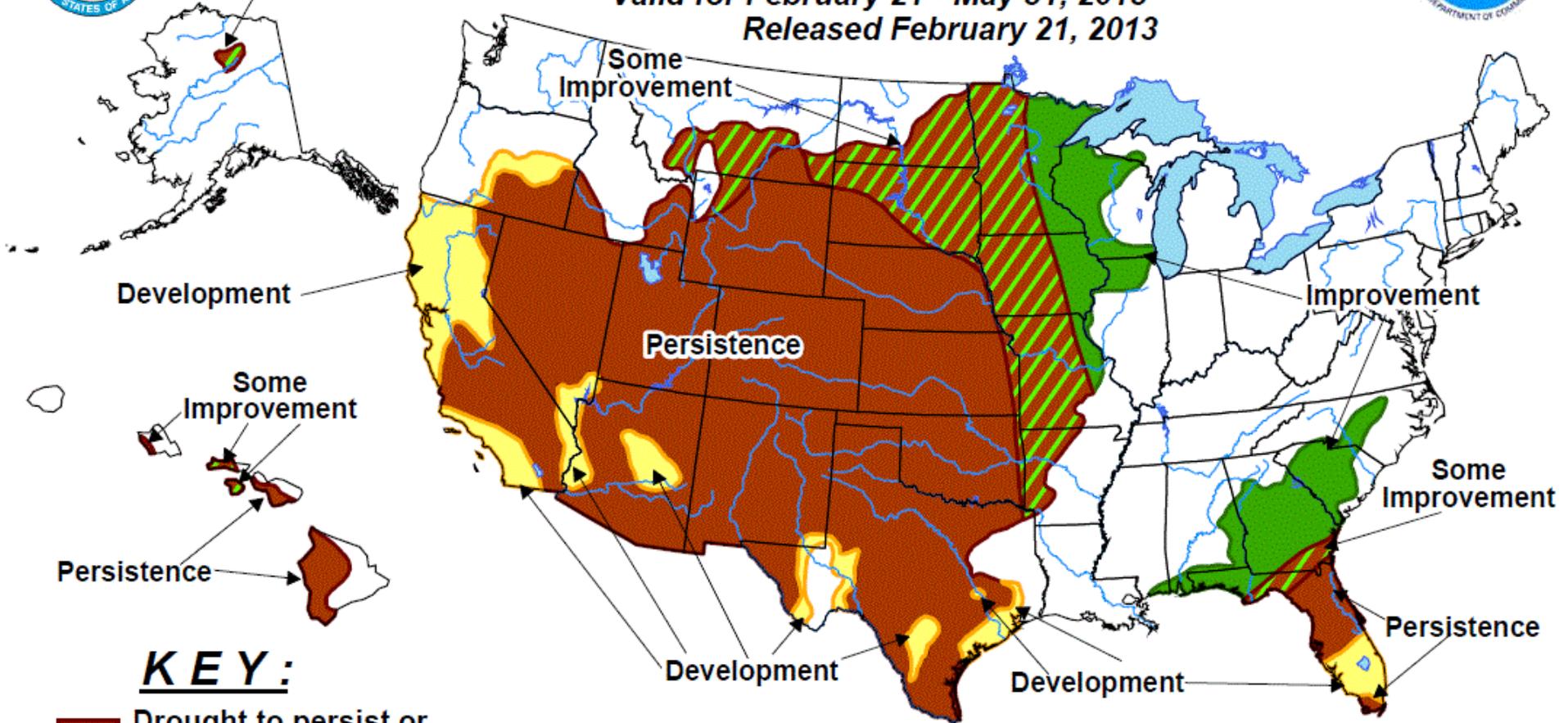
Some Improvement

# U.S. Seasonal Drought Outlook

## Drought Tendency During the Valid Period

Valid for February 21 - May 31, 2013

Released February 21, 2013



### KEY:

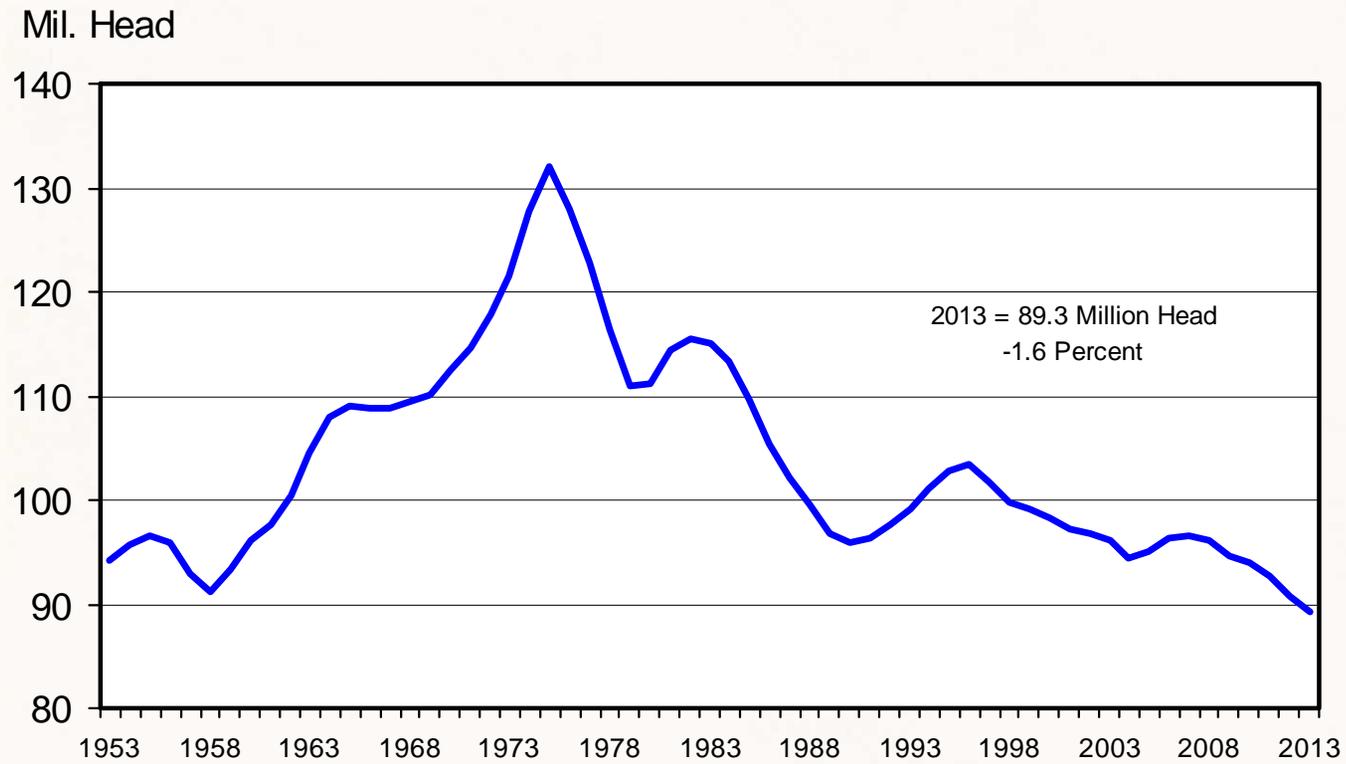
-  Drought to persist or intensify
-  Drought ongoing, some improvement
-  Drought likely to improve, impacts ease
-  Drought development likely

No Drought Posted/Predicted

Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Short-term events -- such as individual storms -- cannot be accurately forecast more than a few days in advance. Use caution for applications -- such as crops -- that can be affected by such events. "Ongoing" drought areas are approximated from the Drought Monitor (D1 to D4 intensity). For weekly drought updates, see the latest U.S. Drought Monitor. NOTE: the green improvement areas imply at least a 1-category improvement in the Drought Monitor intensity levels, but do not necessarily imply drought elimination.

# JANUARY 1 TOTAL CATTLE INVENTORY

## U.S., Annual



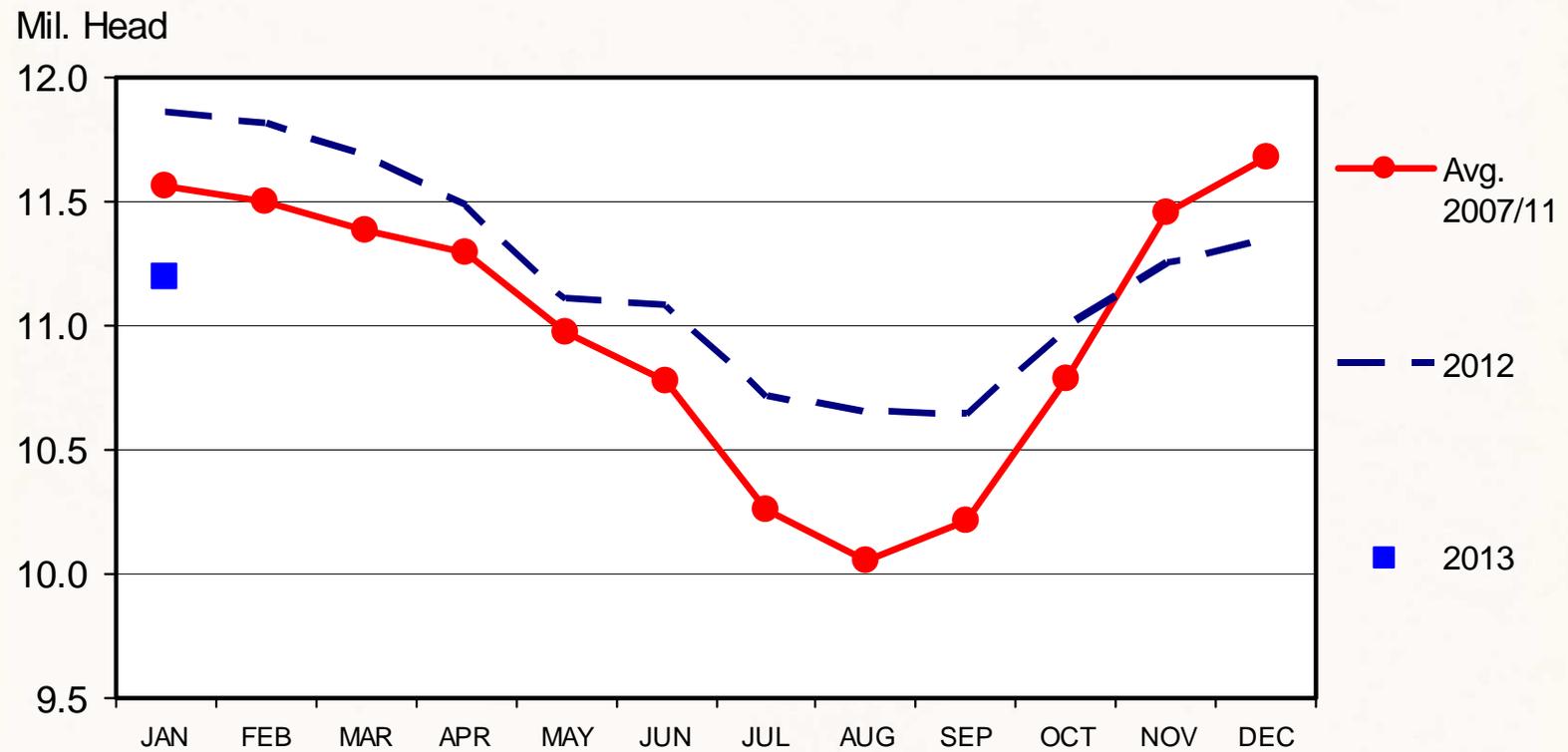
Livestock Marketing Information Center

Data Source: USDA-NASS

C-N-01  
02/04/13

# CATTLE ON FEED

## US Total, Monthly

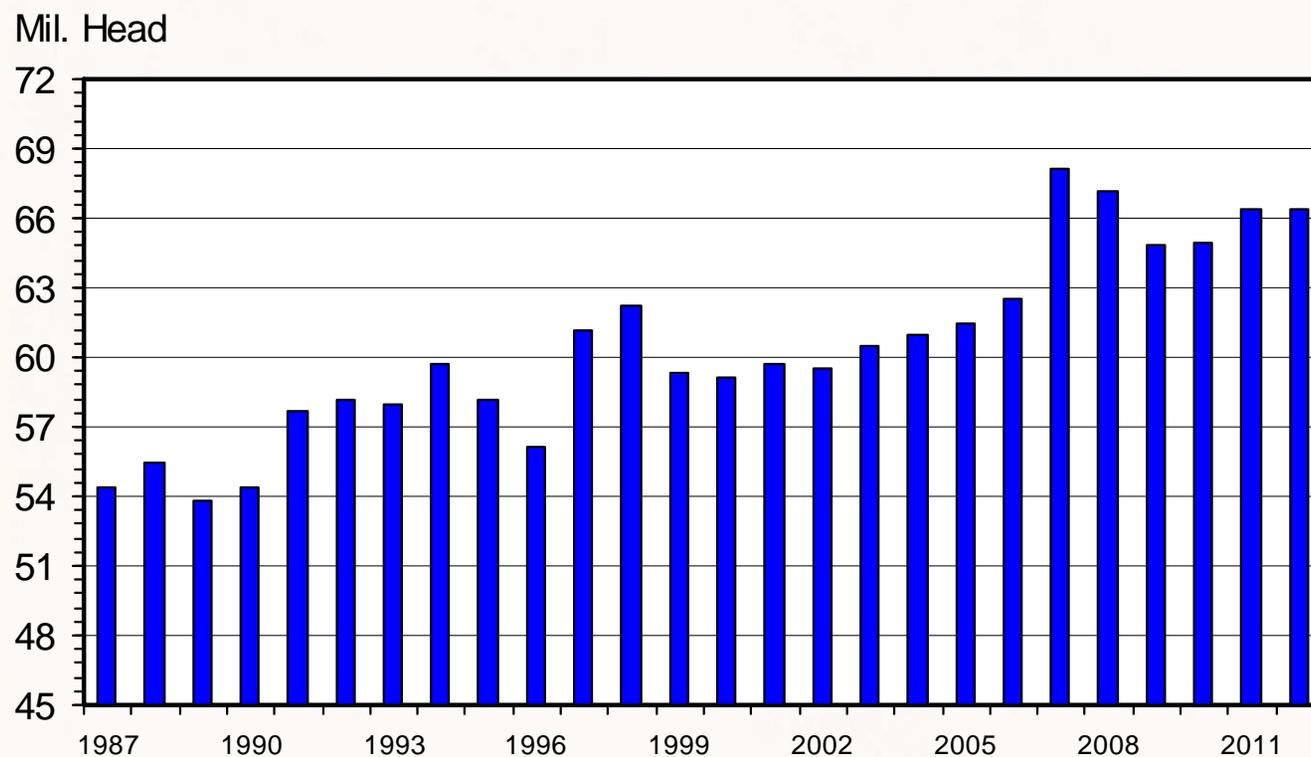


Livestock Marketing Information Center

Data Source: USDA-NASS

C-N-10  
01/26/13

# DECEMBER 1 ALL HOGS AND PIGS U.S. Inventory



Livestock Marketing Information Center

Data Source: USDA-NASS

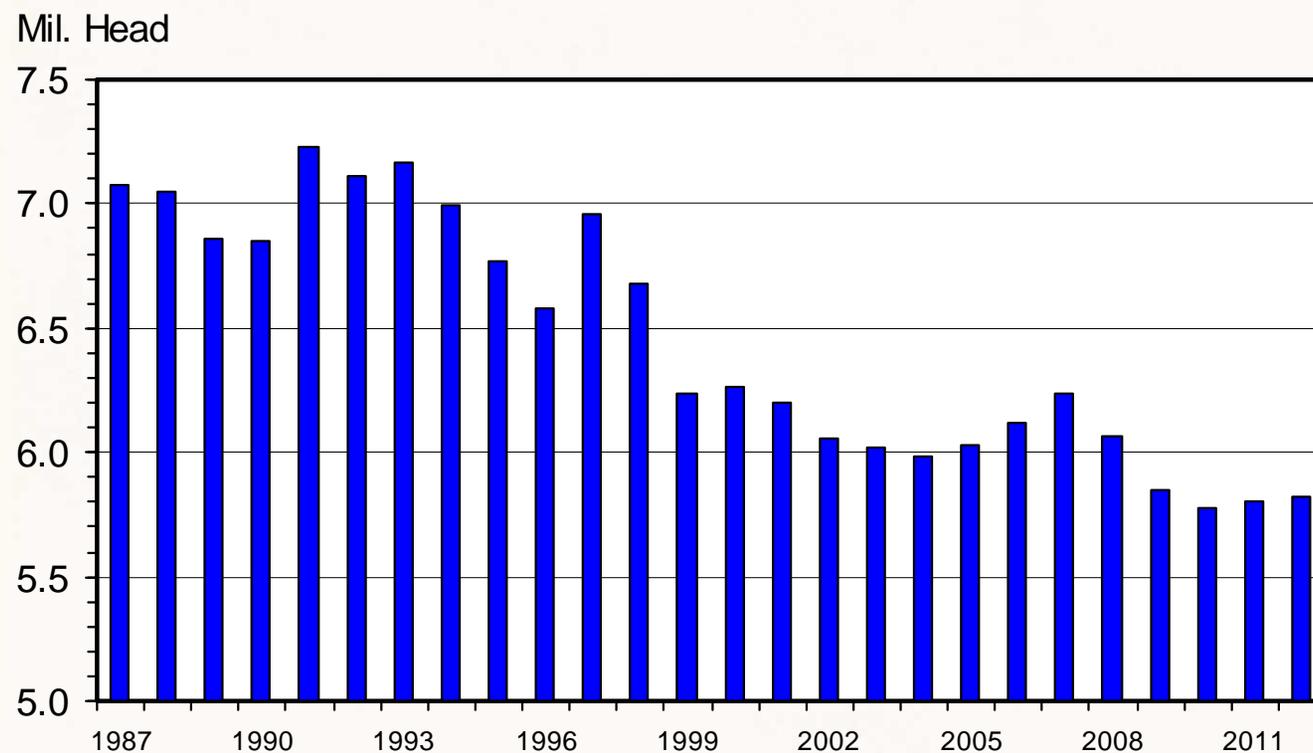
H-N-08  
12/28/12



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# DECEMBER 1 HOG BREEDING HERD

## U.S. Inventory



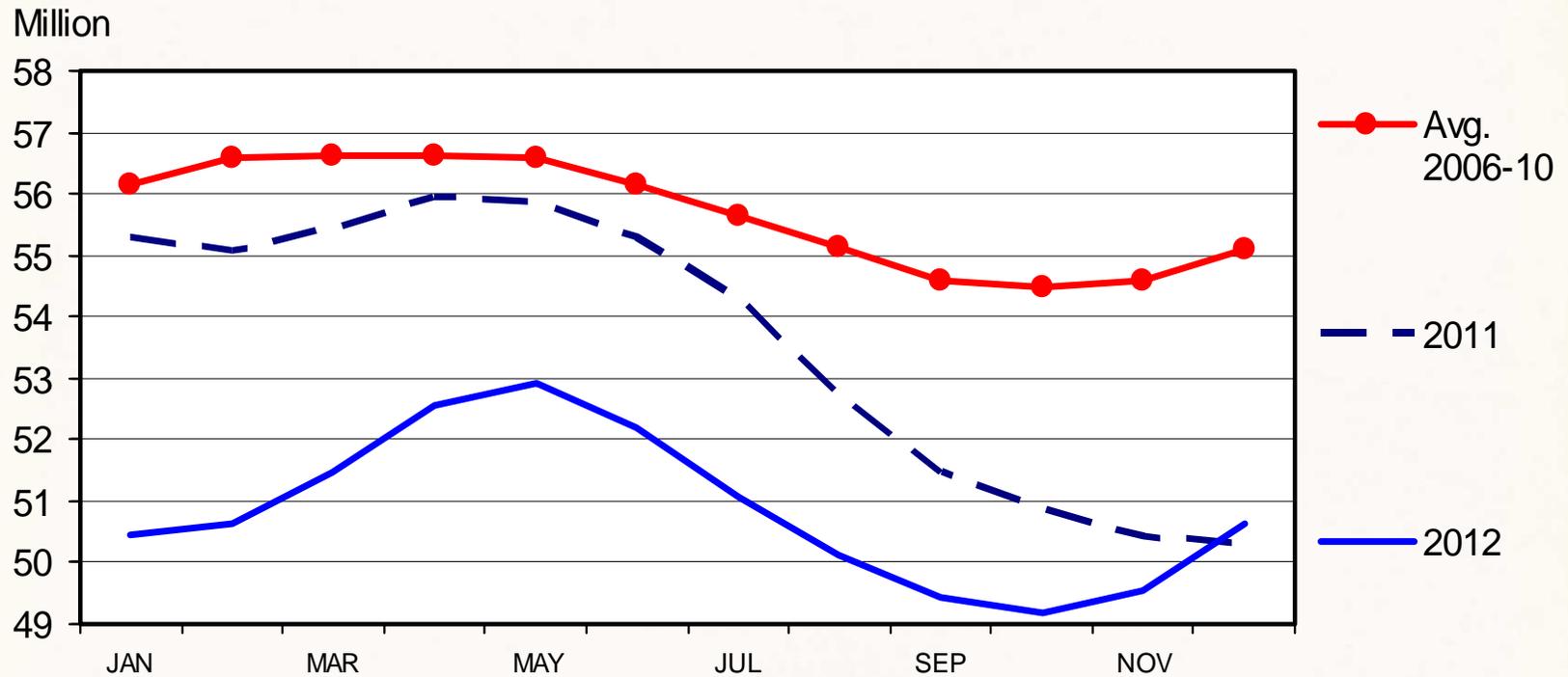
Livestock Marketing Information Center

Data Source: USDA-NASS

H-N-09  
12/28/12

# BROILER-TYPE HATCHING LAYERS

## Average Number On Hand During Month



Livestock Marketing Information Center

Data Source: USDA-NASS

01/24/13

## 2013 Winter Wheat Seedings

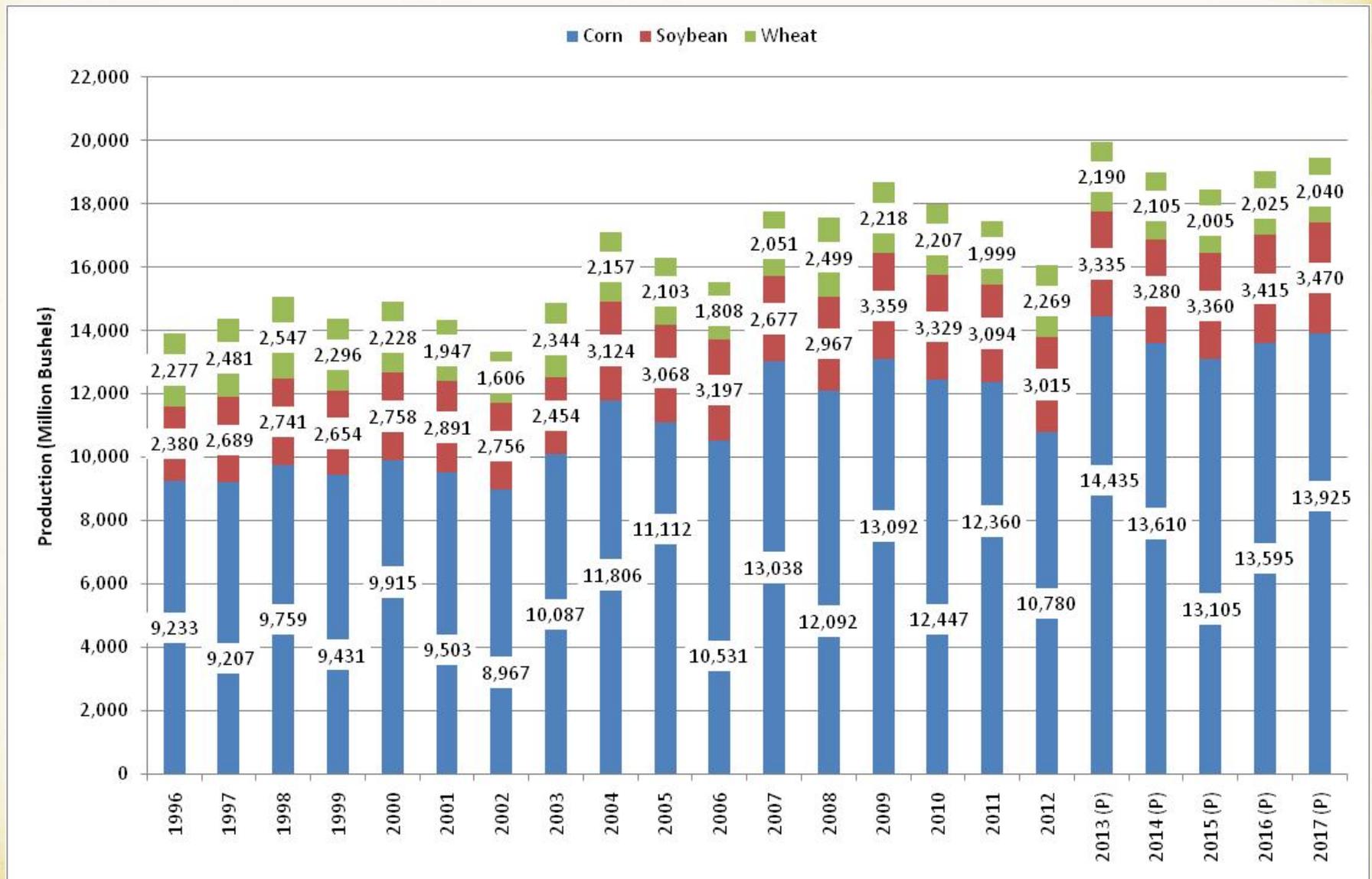
	2012	2013	Change	February 16, 2013
	----- Thousand Acres -----			Drought Percentile
U.S. Winter Wheat	41,324	41,820	+496	
Kansas	9,500	9,300	-200	5th
Texas	5,700	5,800	+100	16th
Oklahoma	5,400	5,500	+100	9th
Colorado	2,350	2,200	-150	9th
Montana	2,300	2,100	-200	9th
Washington	1,700	1,650	-50	91st
Nebraska	1,380	1,480	+100	0
South Dakota	1,320	1,200	-120	7th
Missouri	790	1,000	+210	29th

About 21.78 million Acres seeded in states with  
10<sup>th</sup> Percentile or less (52% of Winter Wheat Seedings)



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# Corn, Soy and Wheat Production from 1996-2017 (P)



Source: USDA-NASS, USDA-ERS

# Biological Lag of Rebuilding Herds / Flocks

## BROILERS = 9 MONTHS



Although the response time for chicken is the fastest of the major proteins, it still takes nine months to alter supply once a decision has been made to increase or decrease production.

## HOGS = 20 MONTHS



Hog producers need about 20 months to alter supply once a decision has been made to increase or decrease production.

## CATTLE = 39 MONTHS



Cattle producers need about 39 months to alter supply once a decision has been made to increase or decrease production. At more than three years, cattle production has the slowest response time of the three major proteins.



# How do Farm Prices Impact Consumers' Food Expenditures?



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2010 Food dollar: Marketing Bill (nominal)



How have the farm and marketing shares changed over time?



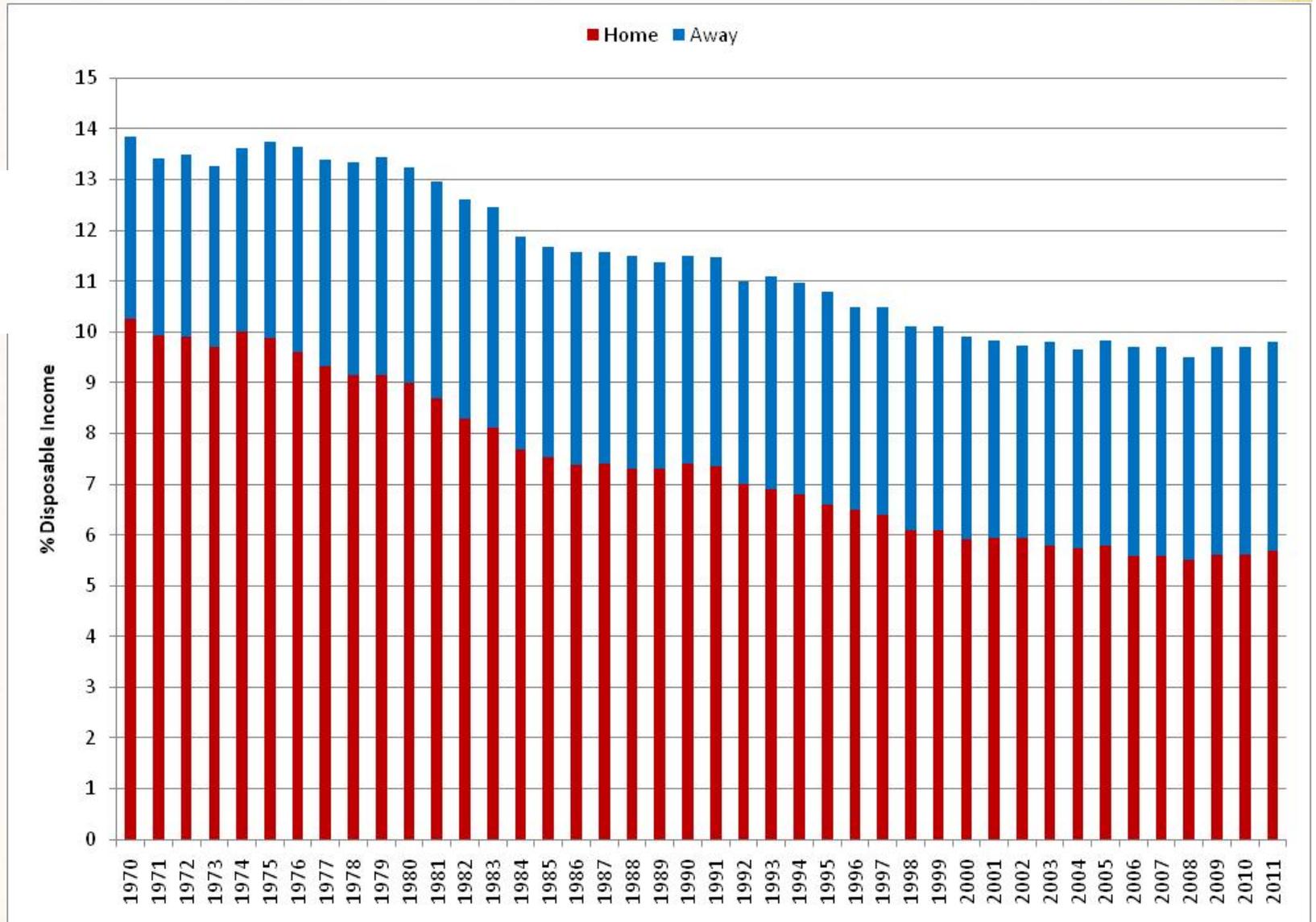
## 2010 Food dollar: Industry Group (nominal)



Since 1993, Farm & Agribusiness share of the food dollar has declined from \$0.145 to \$0.101 with an average of \$0.124

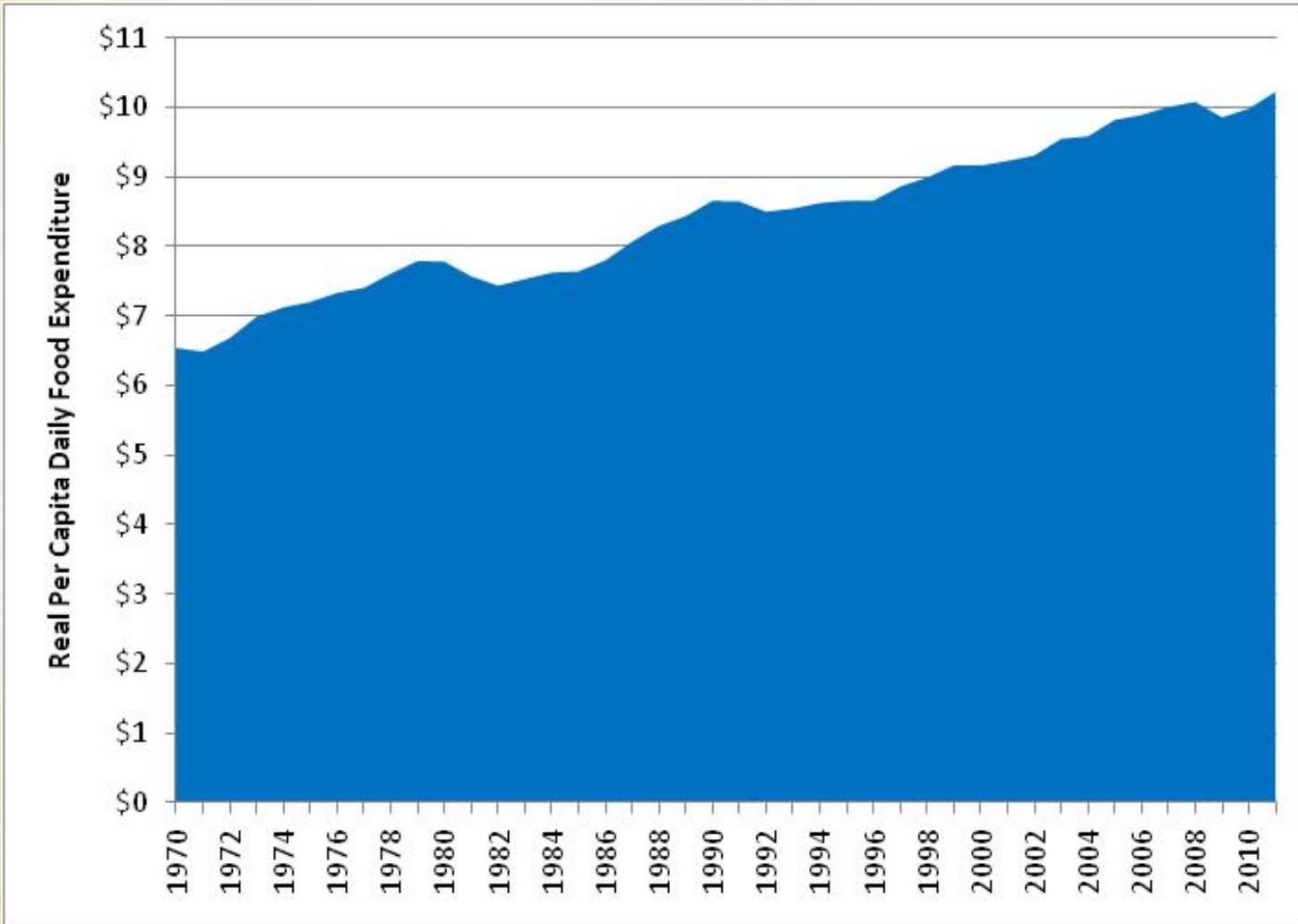
## % of Disposable Income Spent on Food

1970	13.9%
1980	13.2%
1990	11.5%
2000	9.9%
2011	9.8%
At home is	5.7%



Source: USDA: ERS

## Per Capita Daily Food Expenditures (2005 Dollars)



1970: \$6.54/day

2011: \$10.22/day



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## % of Household Expenditures on Food Worldwide

	% Household Expenditures Spent on Food in 2011
United States	6.7
Egypt	43.6
Ukraine	38.2
Russia	31.2
Mexico	22.7
China	21.3
Argentina	21.2
Brazil	15.9
Japan	14.7
Canada	9.7

US has Lowest Expenditures of 84 countries



## Risk Management Tools to Help Farmers Continue to Produce



## Example: Return over Variable Costs with RP Insurance for an Iowa Corn Farm

Harvest Price = \$4.03			
Harvested Yield	ROVC	RP	Total
171	\$9	\$191	\$200
162	-\$27	\$227	\$200
153	-\$63	\$263	\$200
144	-\$100	\$299	\$200
135	-\$136	\$336	\$200
126	-\$172	\$372	\$200
117	-\$208	\$408	\$200

Note: APH Yield = 180 bpa; Projected Price = \$5.75; 85% Coverage Level  
Variable Costs = \$405/acre and Cash Rent = \$276/acre

## Policies Providing a Safety-Net

- Crop Insurance is the Foundation for a Farmer's safety-net
- A new Farm Bill will provide policy certainty to producers, lenders, and other participants in the supply chain
- Given the drought maps, would you invest \$681/acre in corn without the security provided by crop insurance?



## Summary

- Farmer's share of the food dollar is small and declining
- Drought impact on livestock sector is significant and often over-looked by media
- When U.S. returns to near-trend yields and stocks rebuild, poultry and pork have capacity to expand faster than beef
  - Relatively more expensive beef than pork/chicken
  - Loss of beef market-share



**Thank You for Your Attention!**



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