The Midwest Drought of 2012:

A Tale of Two Years

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Midwest Climate Outlook and Drought Early Warning System (DEWS)
Kickoff Meeting
St. Louis, Missouri February 9-11, 2016

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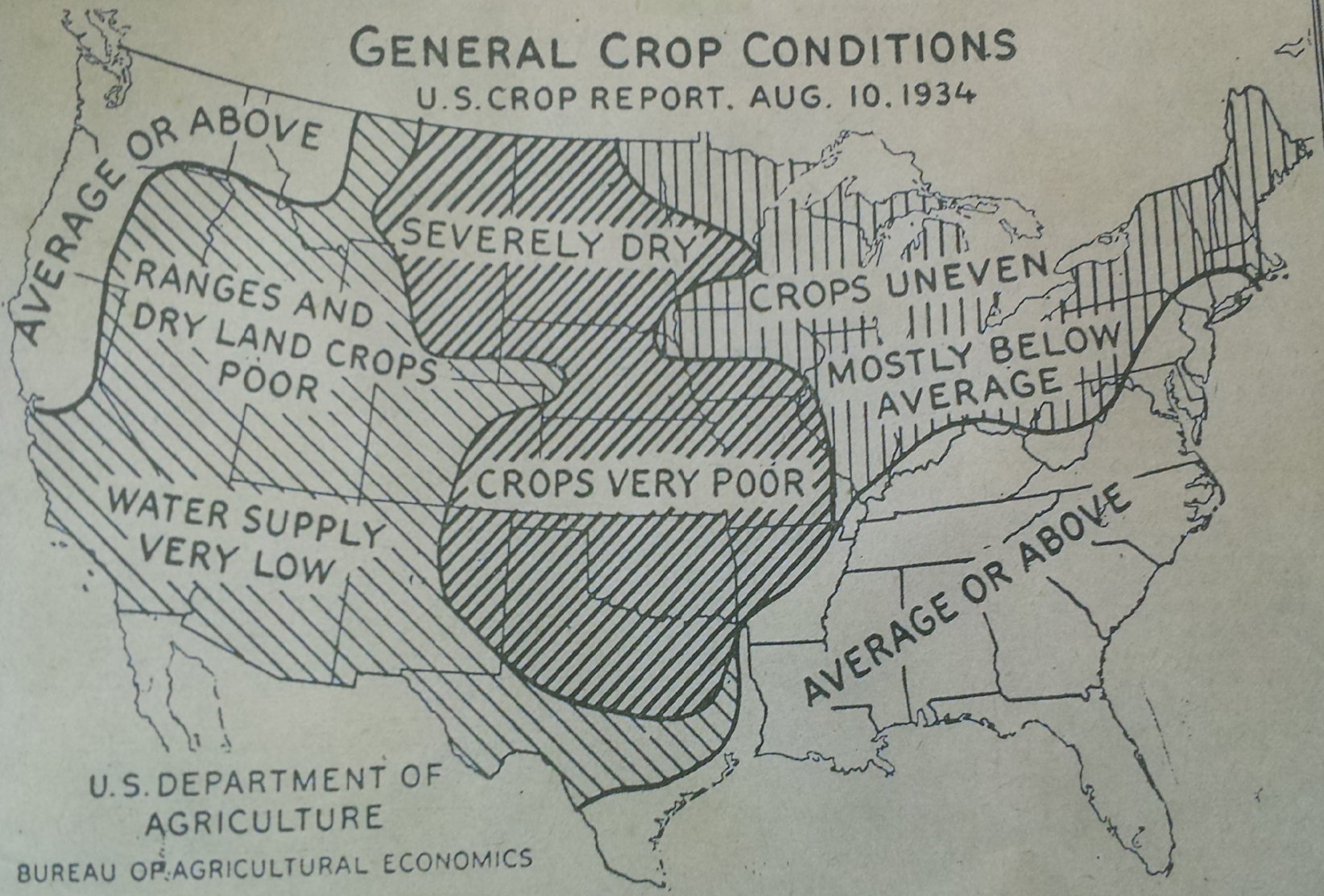
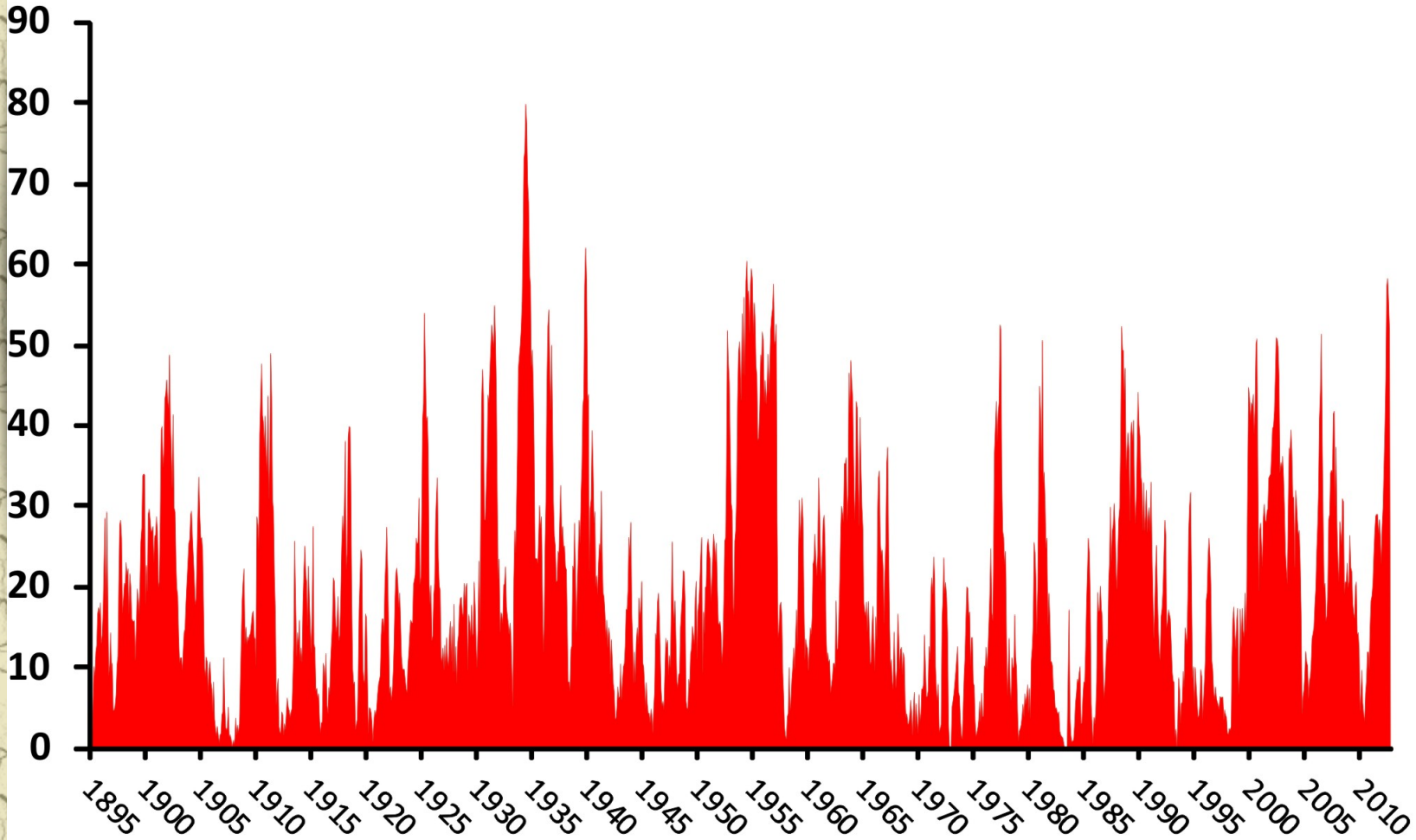
CROP EXPERTS MAKE MAP OF DROUTH AREAS



This chart, prepared by the United States Department of Agriculture, shows conditions in the different parts of the United States

Percent Area of the United States in Moderate to Extreme Drought

January 1895–September 2012



Based on data from the National Climatic Data Center/NOAA

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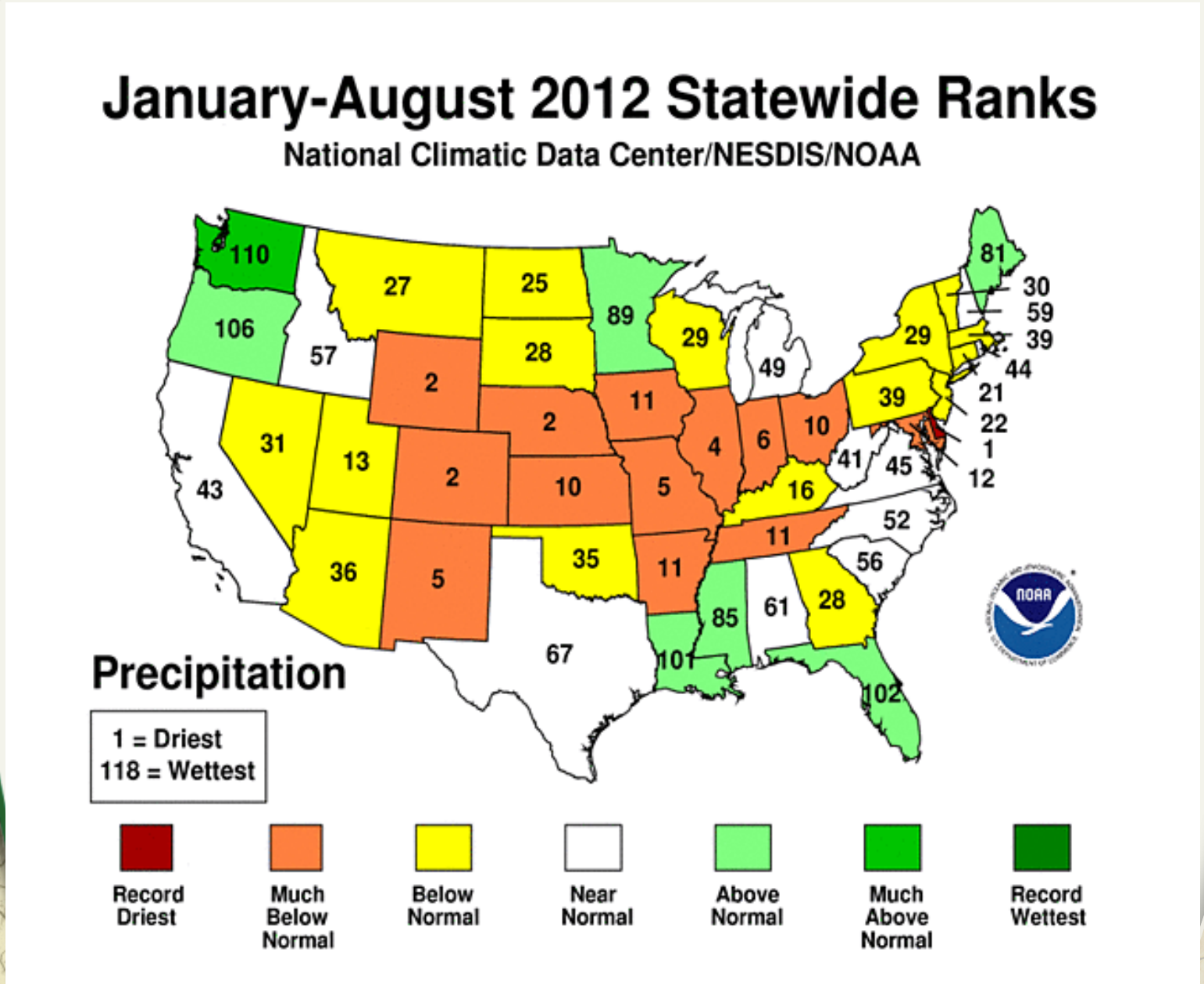
Going from wet to dry



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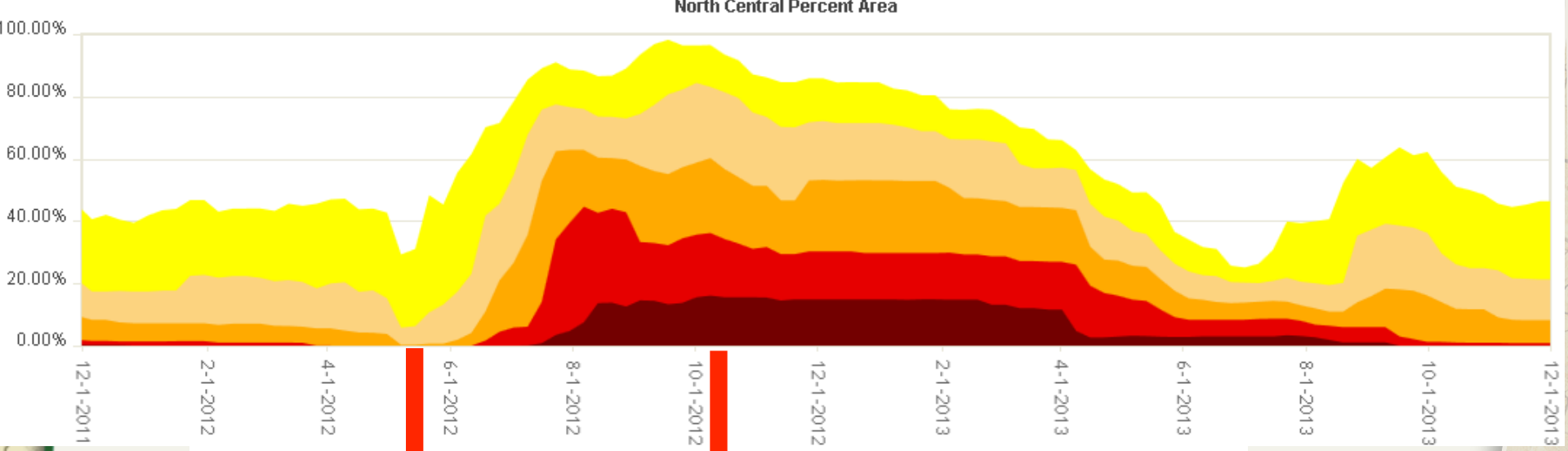
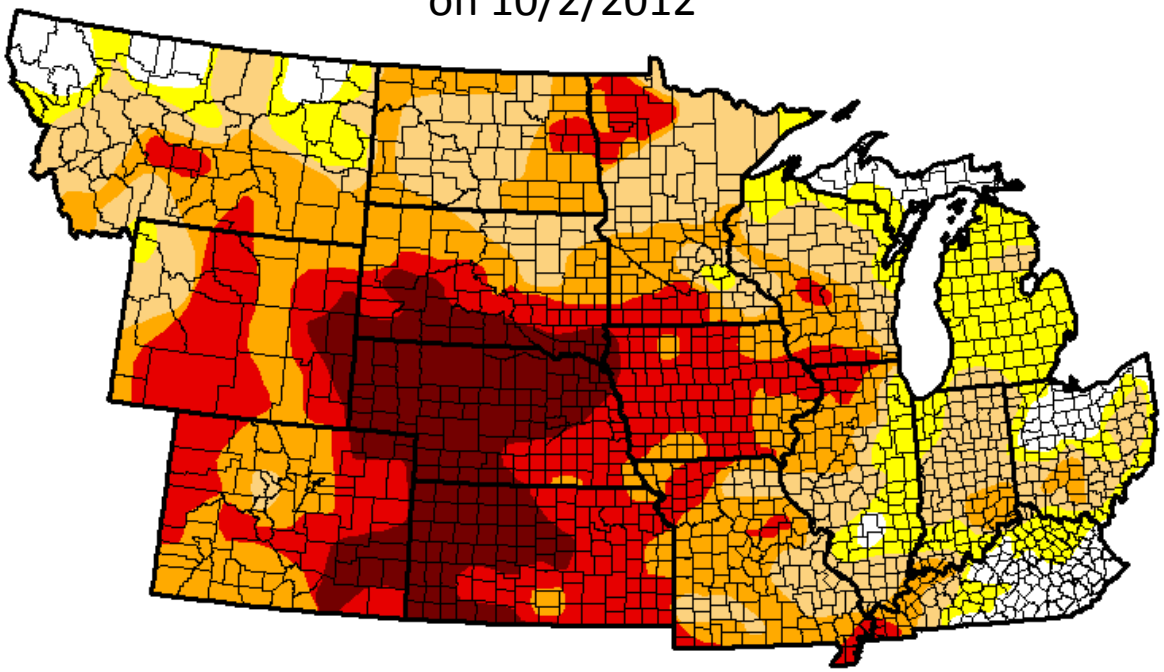
"Flash Drought"

- Rapidly developing drought due to the lack of precipitation in addition to higher than normal temperatures
  - Usually associated with Agricultural and Meteorological Drought
  - High wind speeds can amplify the impacts too



5.76% in drought
on 5/8/2012

84.35% in drought
on 10/2/2012



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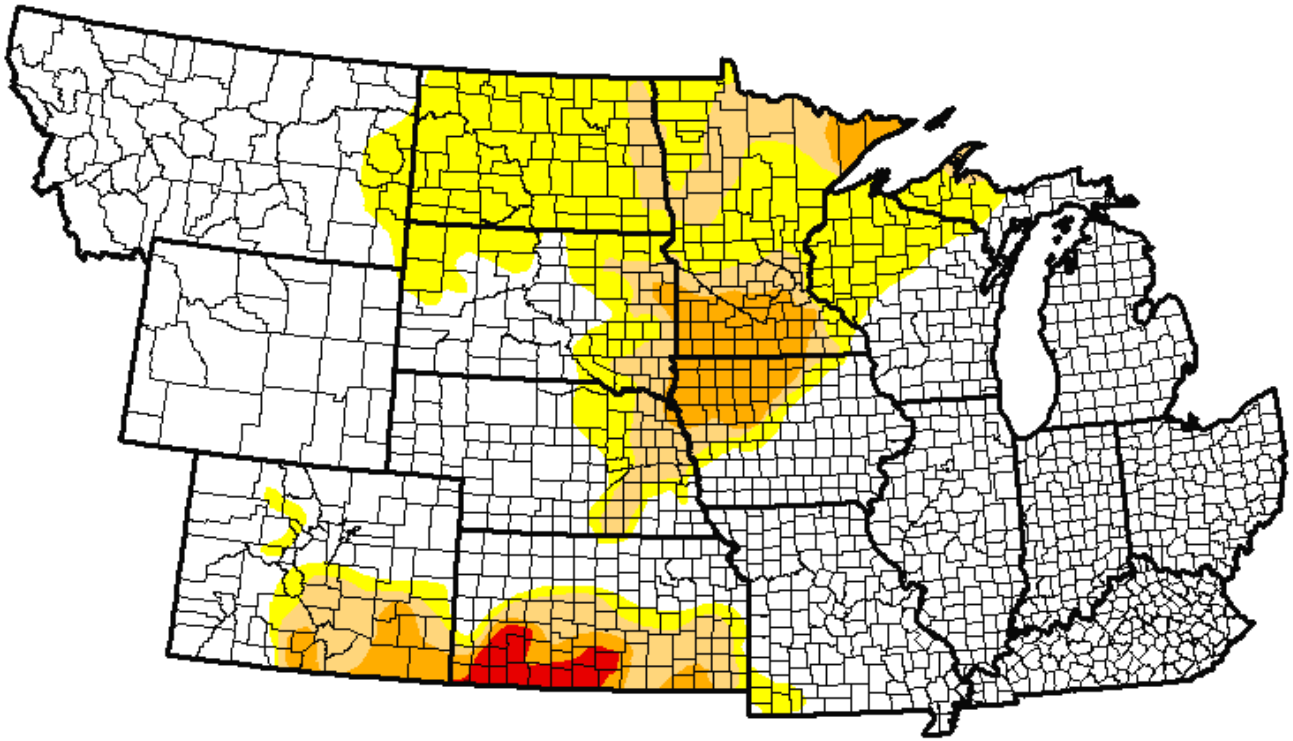

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NATIONAL INTEGRATED DROUGHT INFORMATION SYSTEM

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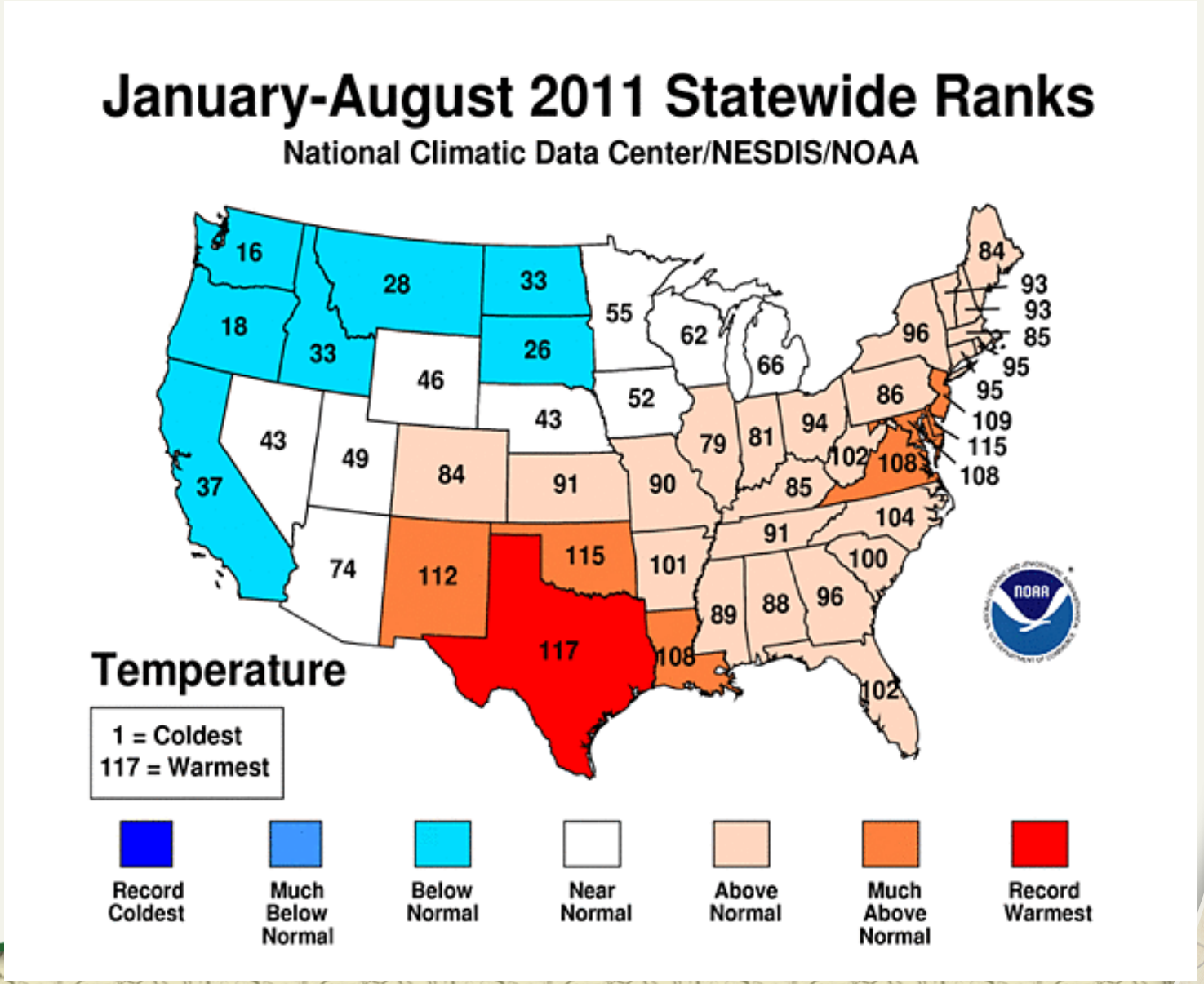
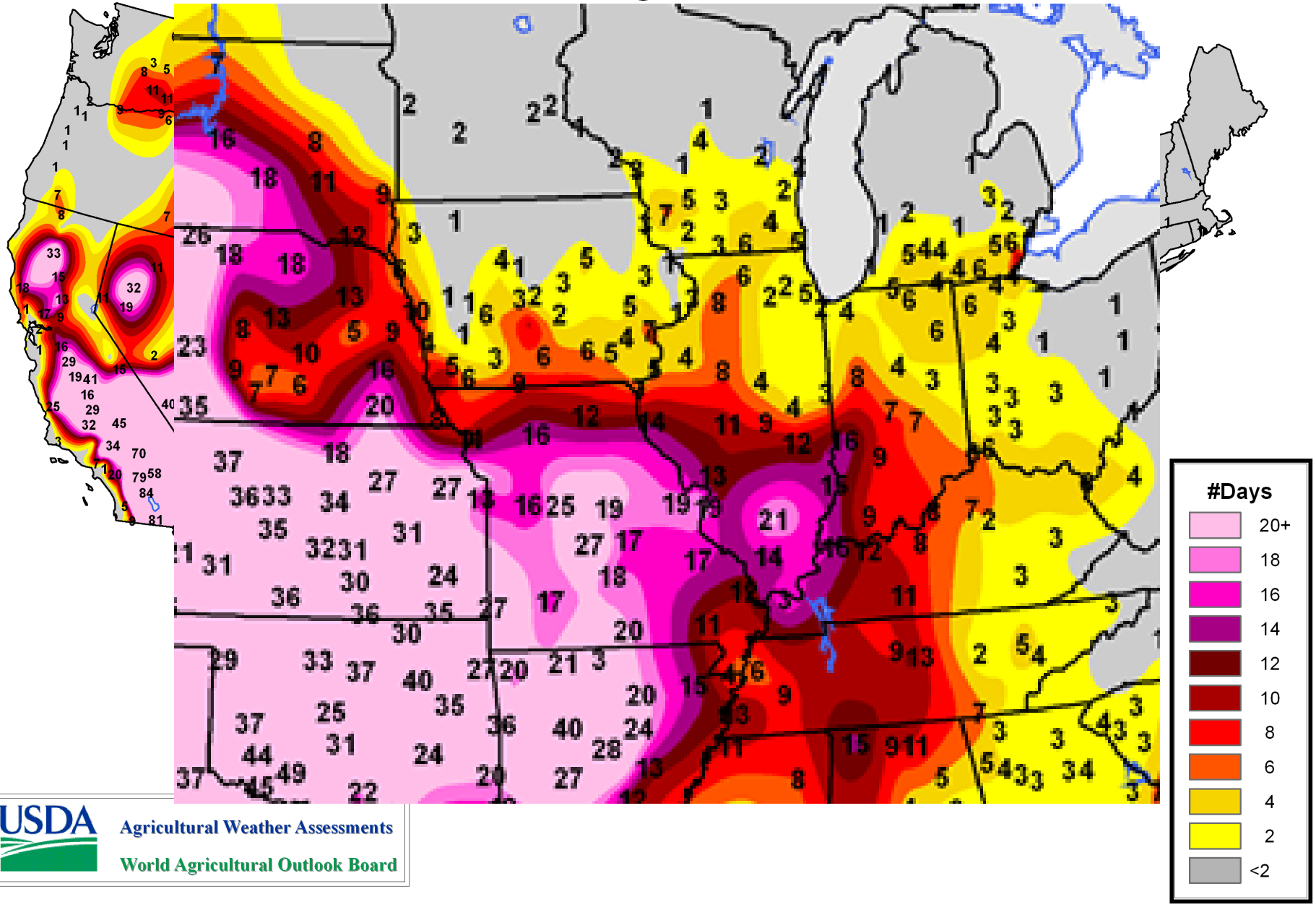
National Drought Mitigation Center

The Impact of Temperatures



Number of Days >= 100°F

June 1 - August 31, 2012



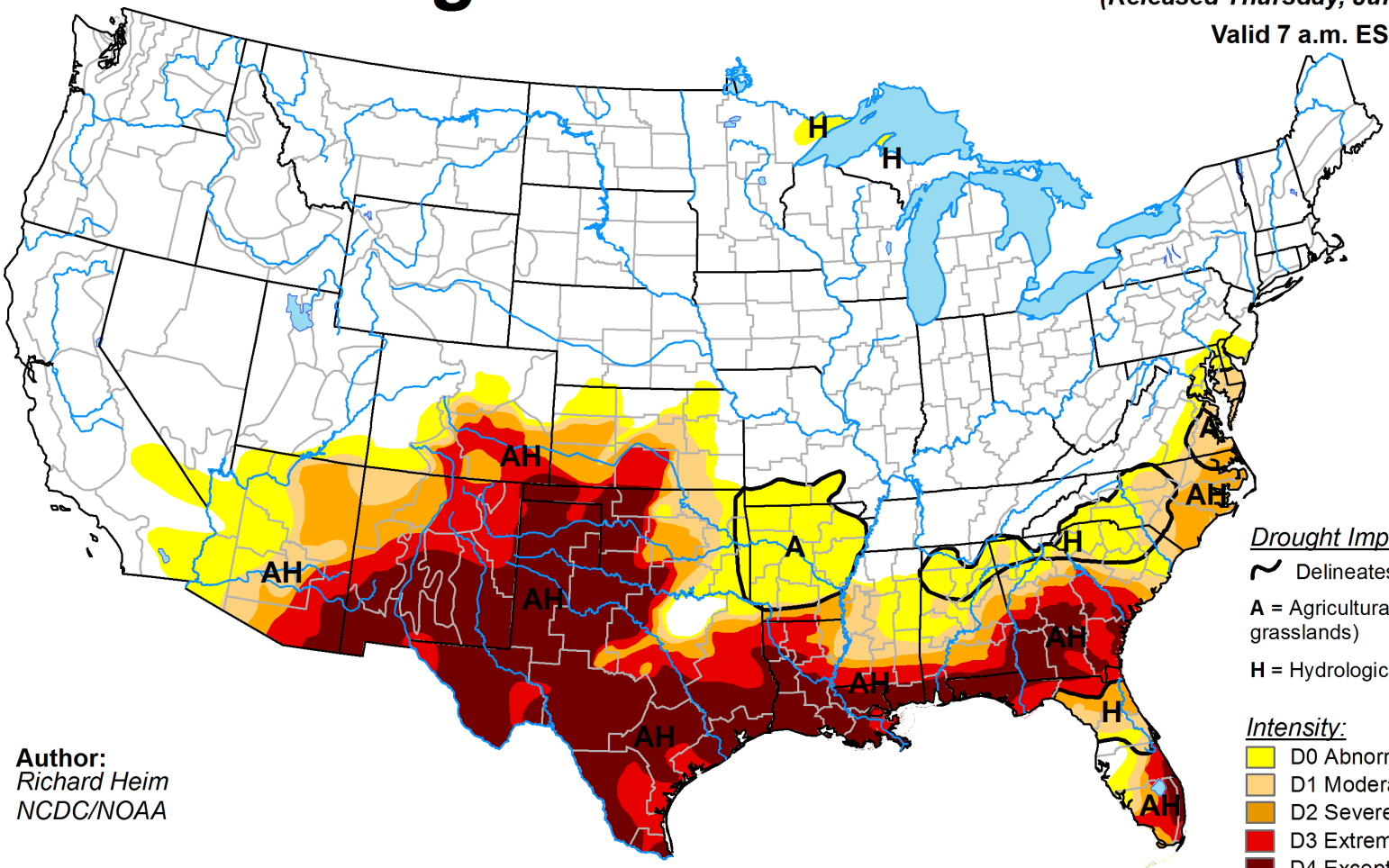
USDA Agricultural Weather Assessments
World Agricultural Outlook Board

U.S. Drought Monitor

June 28, 2011

(Released Thursday, Jun. 30, 2011)

Valid 7 a.m. EST



Author:
Richard Heim
NCDC/NOAA

Drought Impact Types:

Delineates dominant impacts

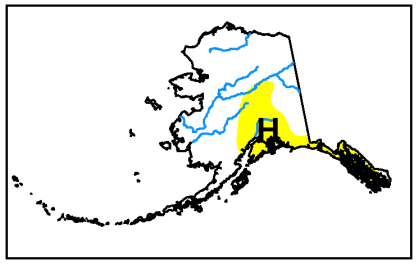
A = Agricultural (crops, pastures, grasslands)

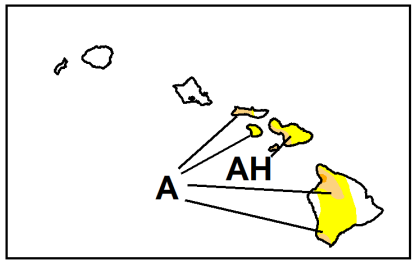
H = Hydrological (water)

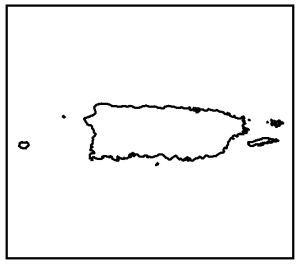
Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

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







USDA National Drought Mitigation Center

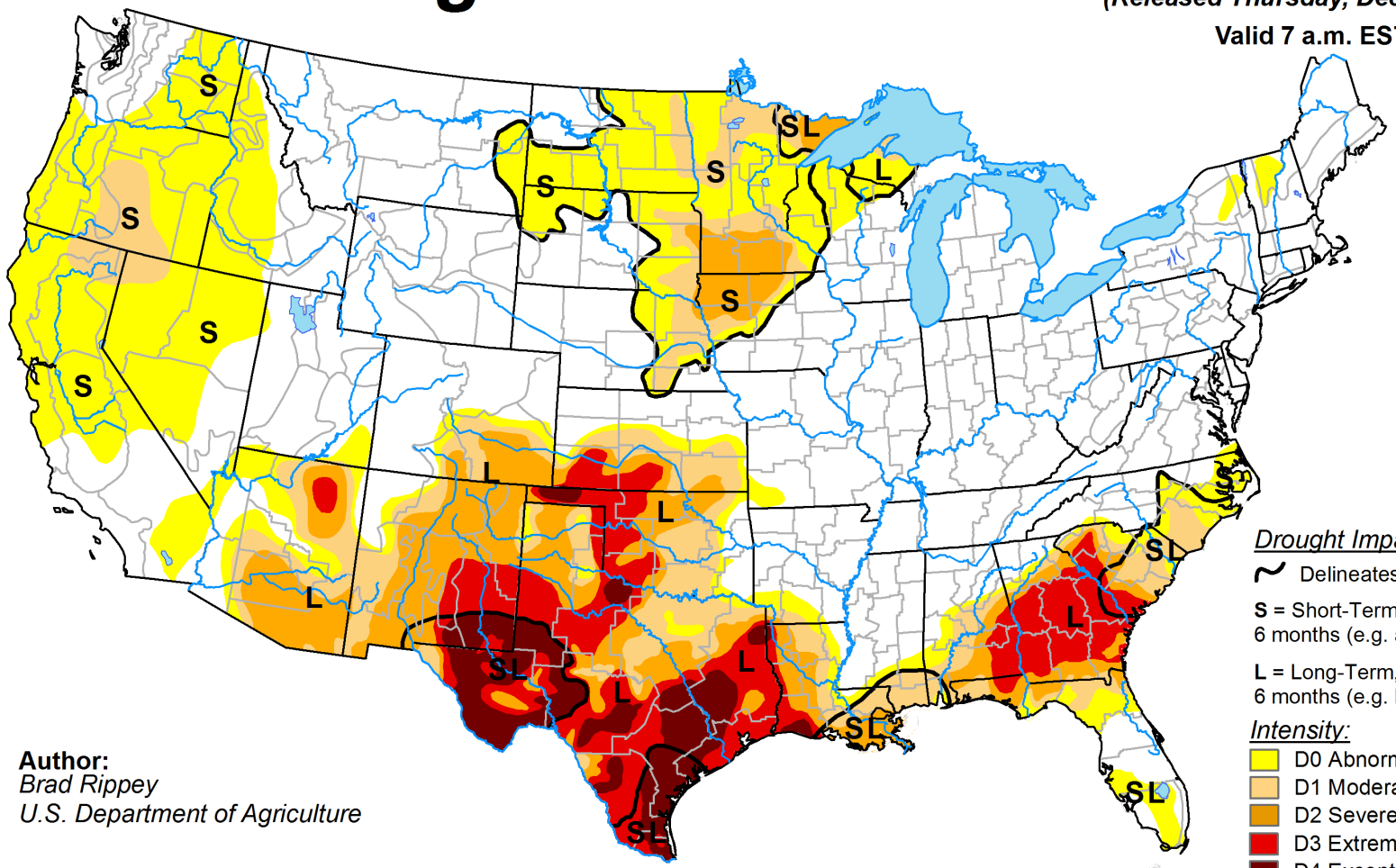
http://droughtmonitor.unl.edu/

U.S. Drought Monitor

December 27, 2011

(Released Thursday, Dec. 29, 2011)

Valid 7 a.m. EST



Author:
Brad Rippey
U.S. Department of Agriculture

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)

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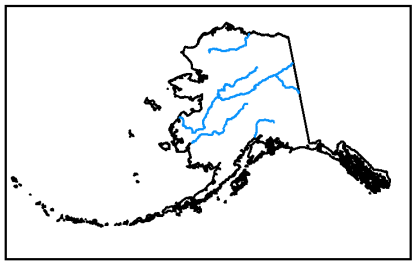

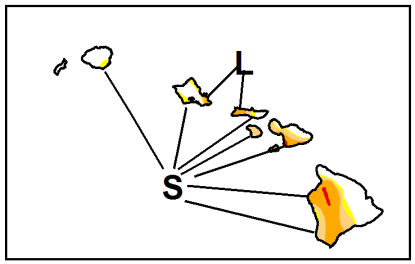

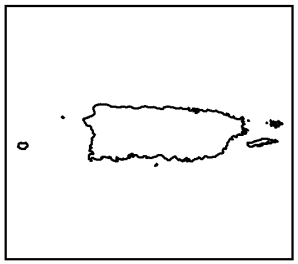

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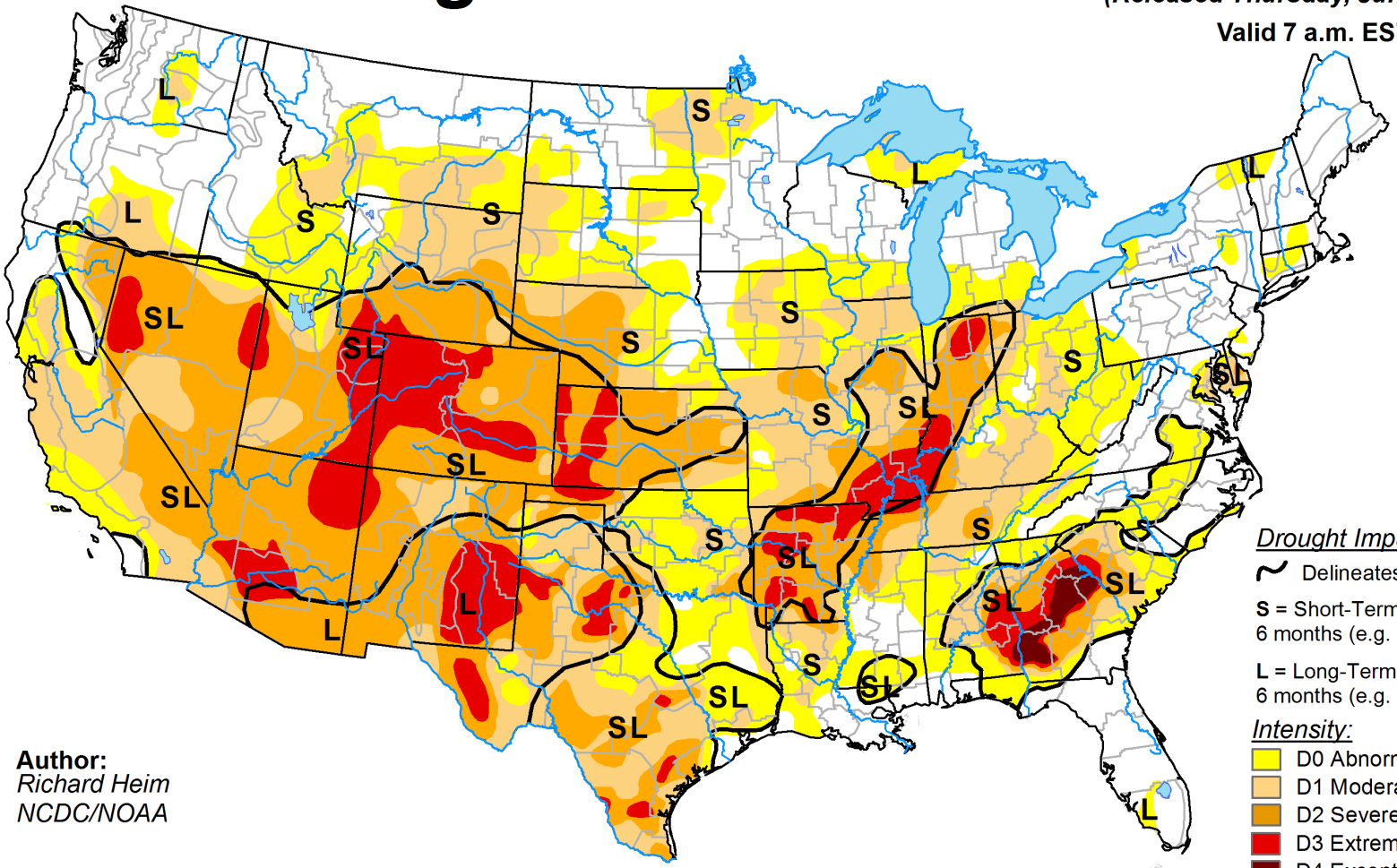
http://droughtmonitor.unl.edu/

U.S. Drought Monitor

June 26, 2012

(Released Thursday, Jun. 28, 2012)

Valid 7 a.m. EST



Author:
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NCDC/NOAA

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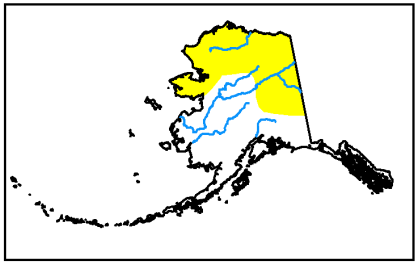
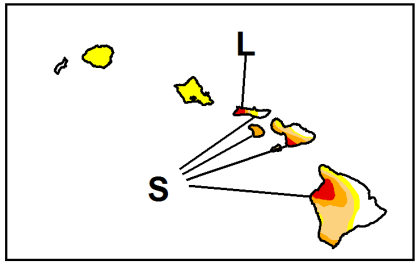
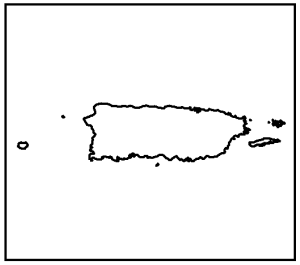




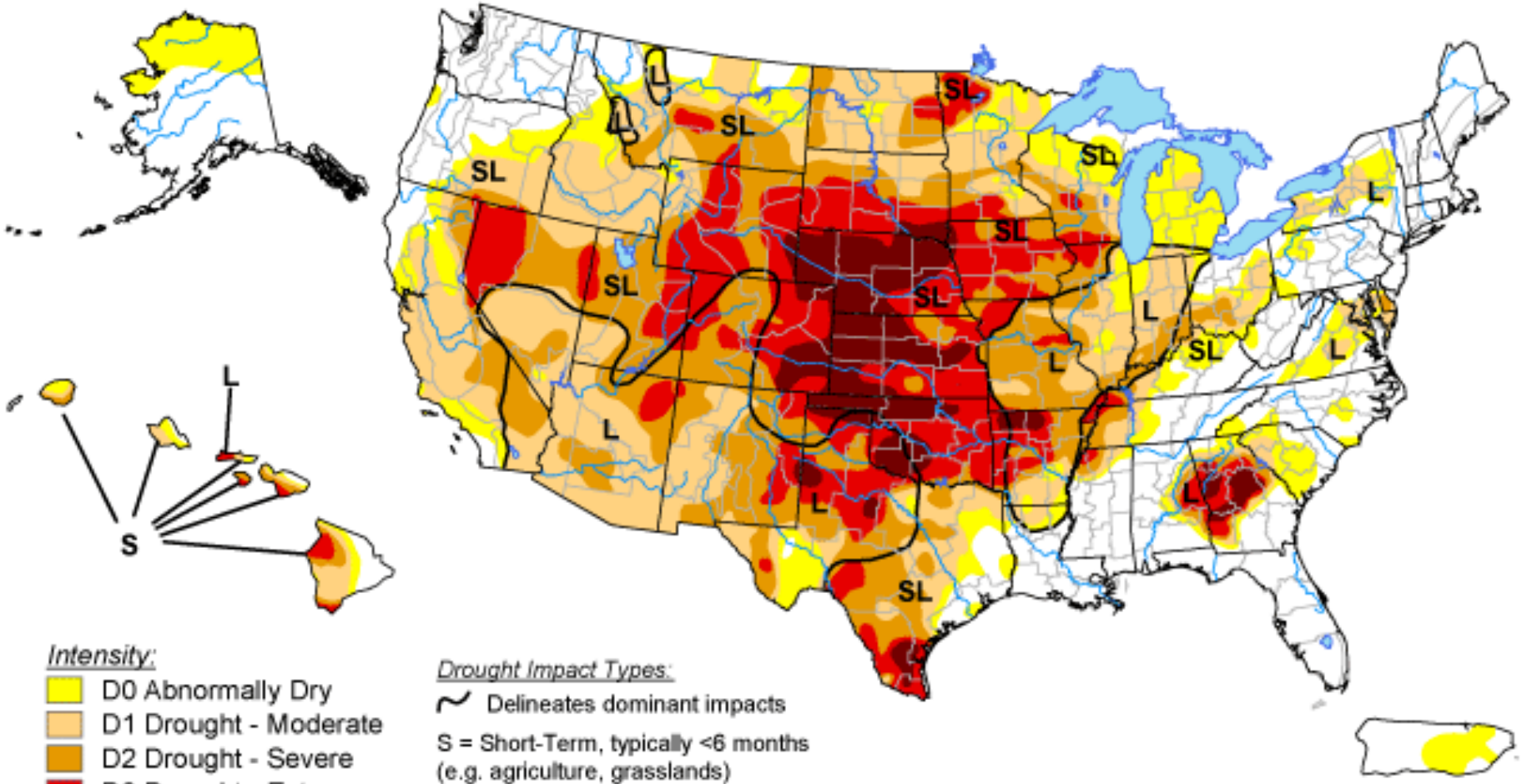


USDA National Drought Mitigation Center

http://droughtmonitor.unl.edu/

U.S. Drought Monitor

September 25, 2012
Valid 7 a.m. EDT



Intensity:
- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional

Drought Impact Types:

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

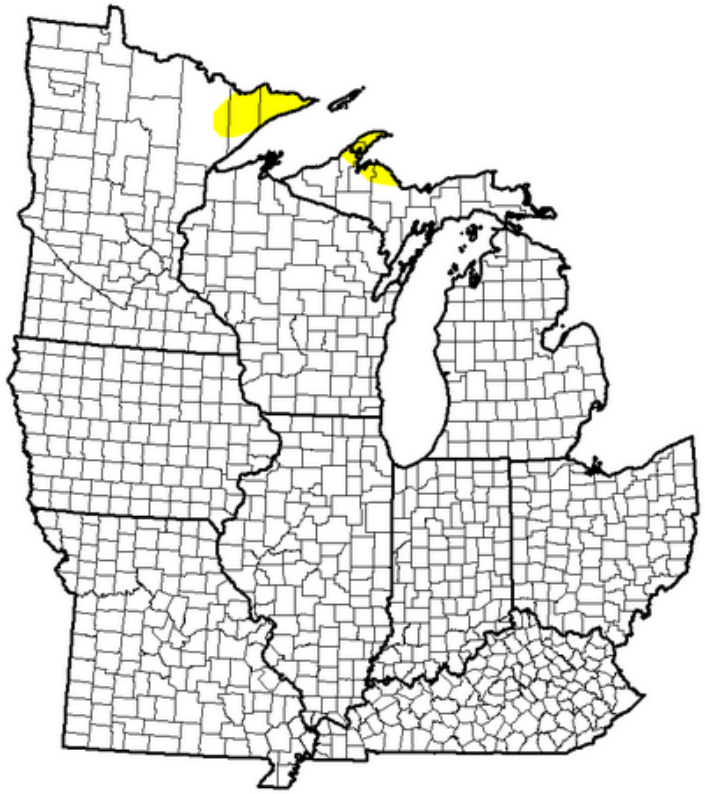
http://droughtmonitor.unl.edu/

Released Thursday, September 27, 2012

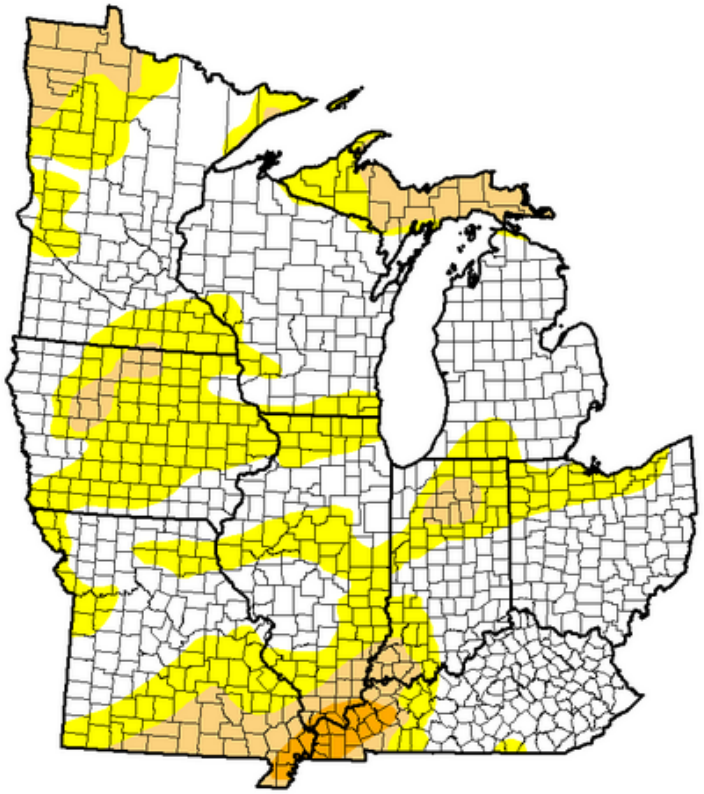
Author: Anthony Artusa, NOAA/NWS/NCEP/CPC

U.S. Drought Monitor Weekly Comparison

Climate R... | Midwest | Statistics type: Traditional Percent Area | Legend



PNG PDF JPG | May 31, 2011



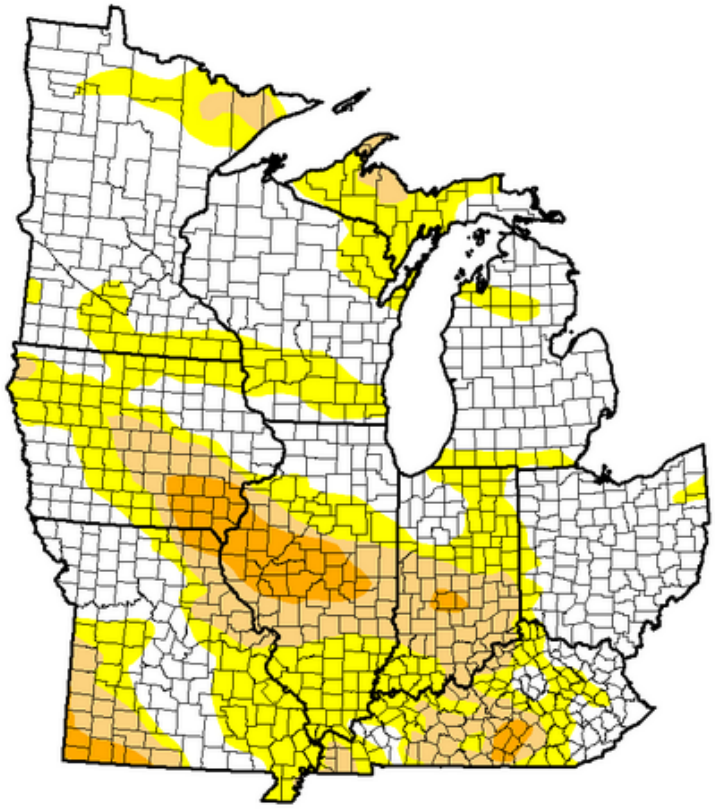
PNG PDF JPG | May 29, 2012

Statistics Comparison

Week	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
2011-05-31	98.82	1.18	0.00	0.00	0.00	0.00
2012-05-29	57.68	42.32	11.34	1.42	0.00	0.00

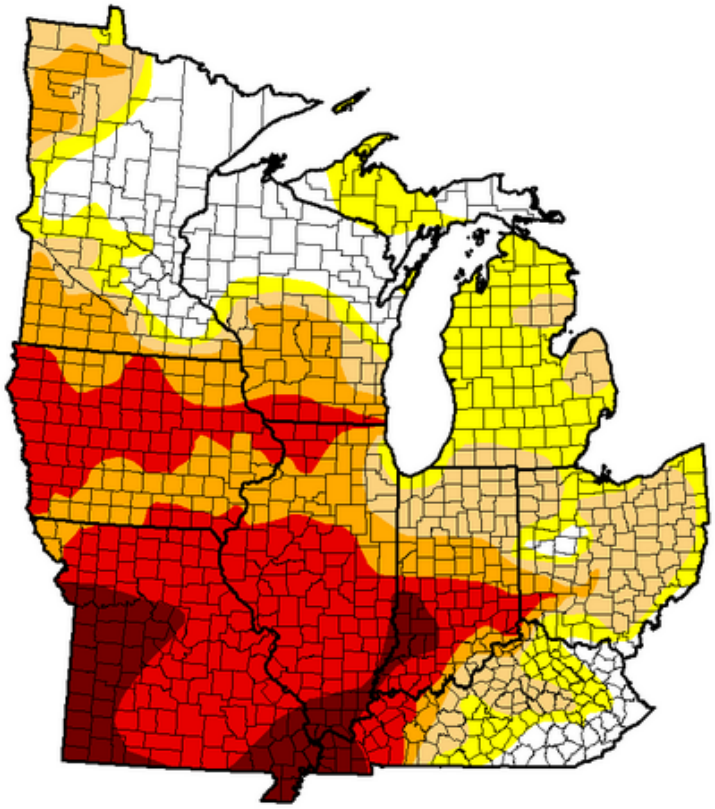
U.S. Drought Monitor Weekly Comparison

Climate R... | Midwest | Statistics type: Traditional Percent Area | Legend



PNG PDF JPG

August 30, 2011



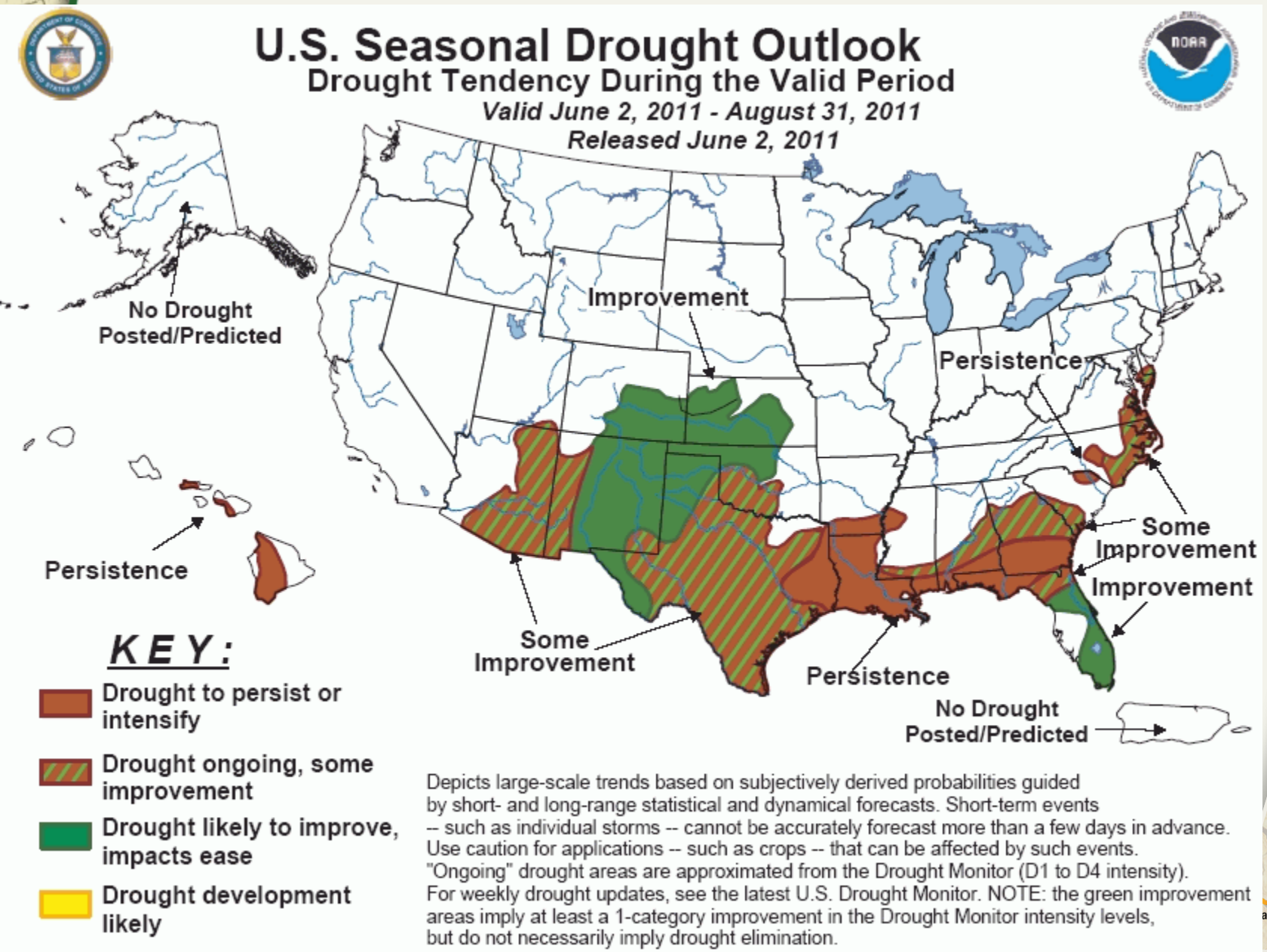
PNG PDF JPG

August 28, 2012

Statistics Comparison

Week	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
2011-08-30	52.33	47.67	18.10	4.84	0.00	0.00
2012-08-28	17.67	82.33	65.38	49.96	33.19	7.09

Was this expected ?



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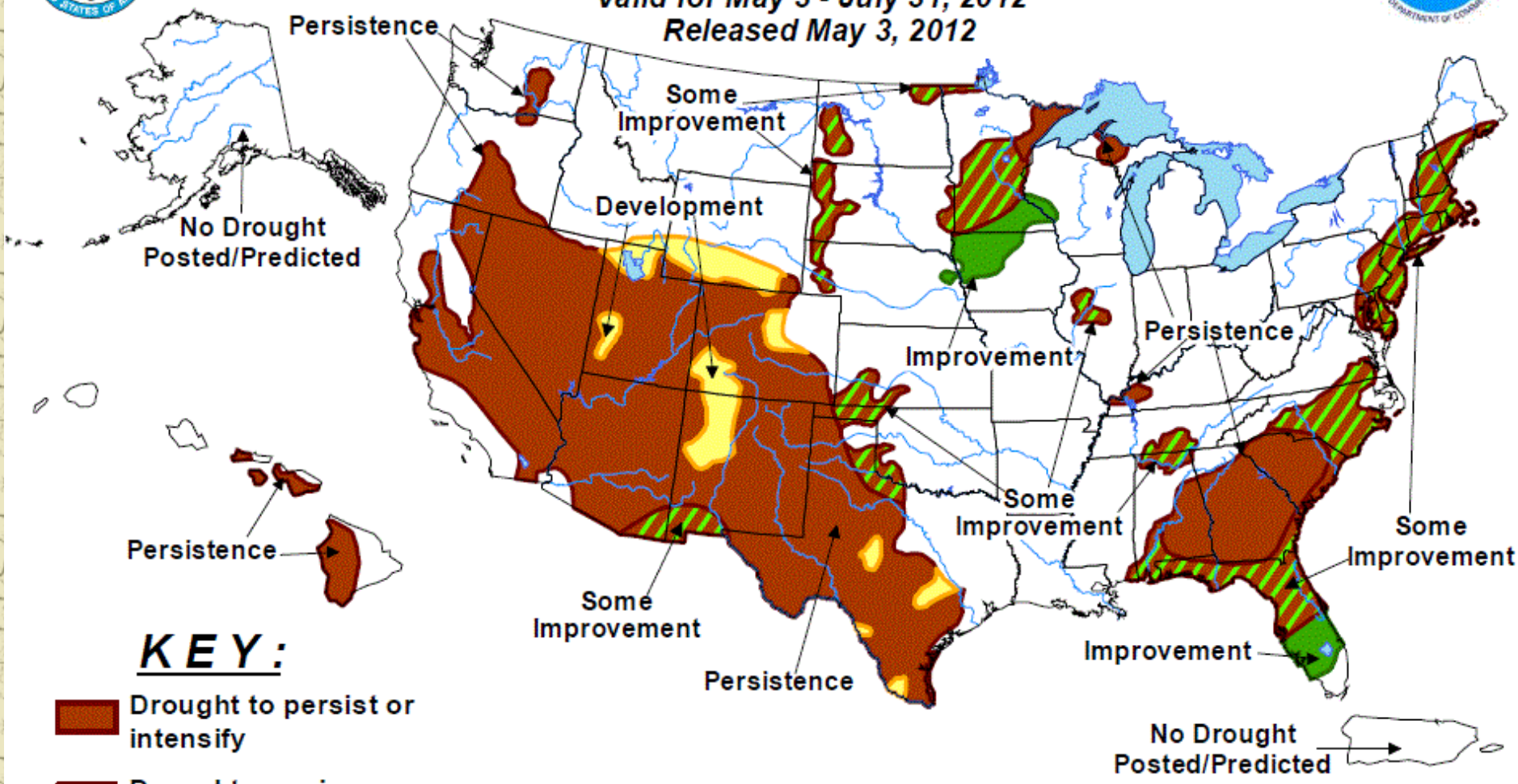
U.S. Seasonal Drought Outlook

Drought Tendency During the Valid Period

Valid for May 3 - July 31, 2012

Released May 3, 2012



KEY:

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

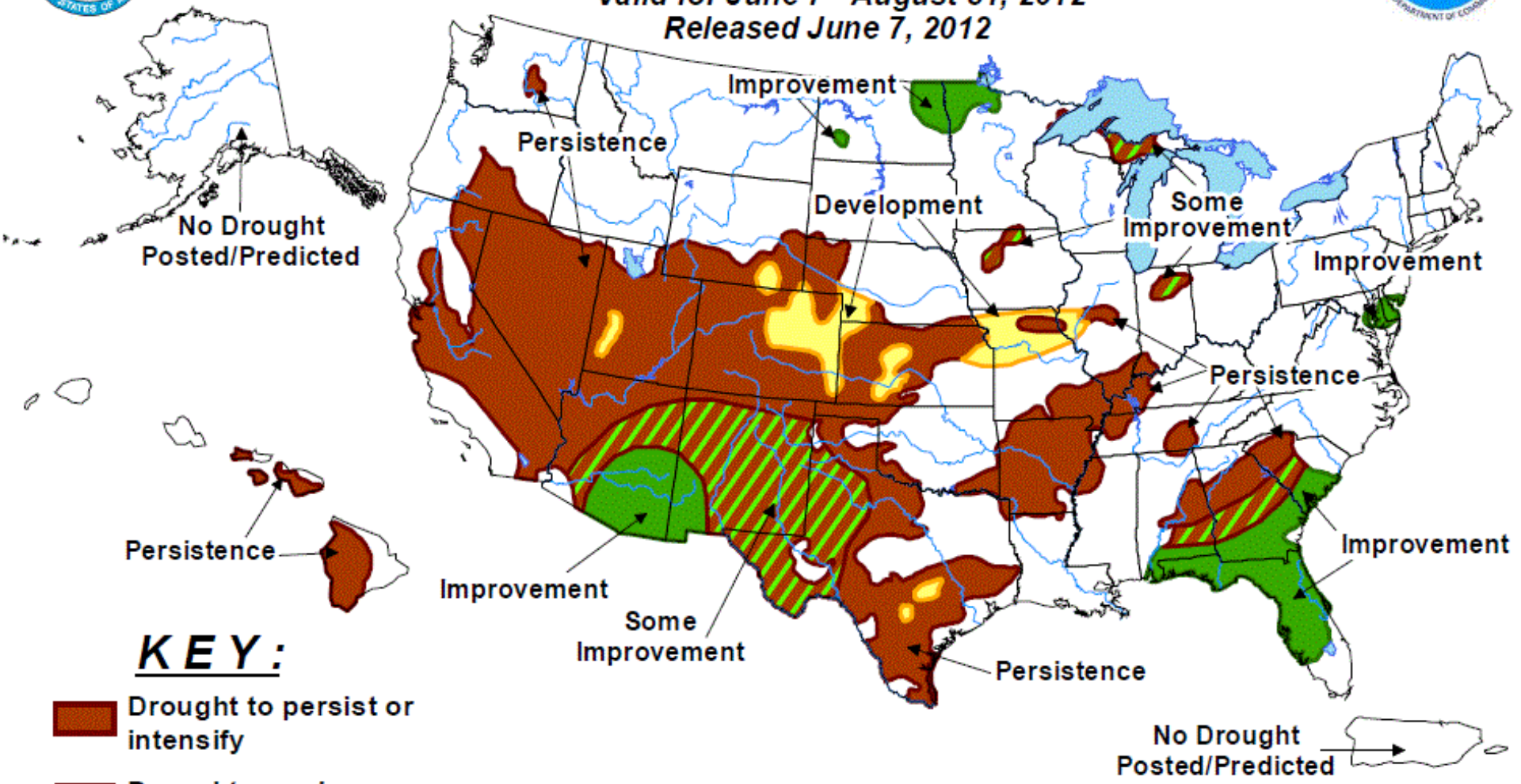
Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Short-term events -- such as individual storms -- cannot be accurately forecast more than a few days in advance. Use caution for applications -- such as crops -- 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.

U.S. Seasonal Drought Outlook

Drought Tendency During the Valid Period

Valid for June 7 - August 31, 2012

Released June 7, 2012



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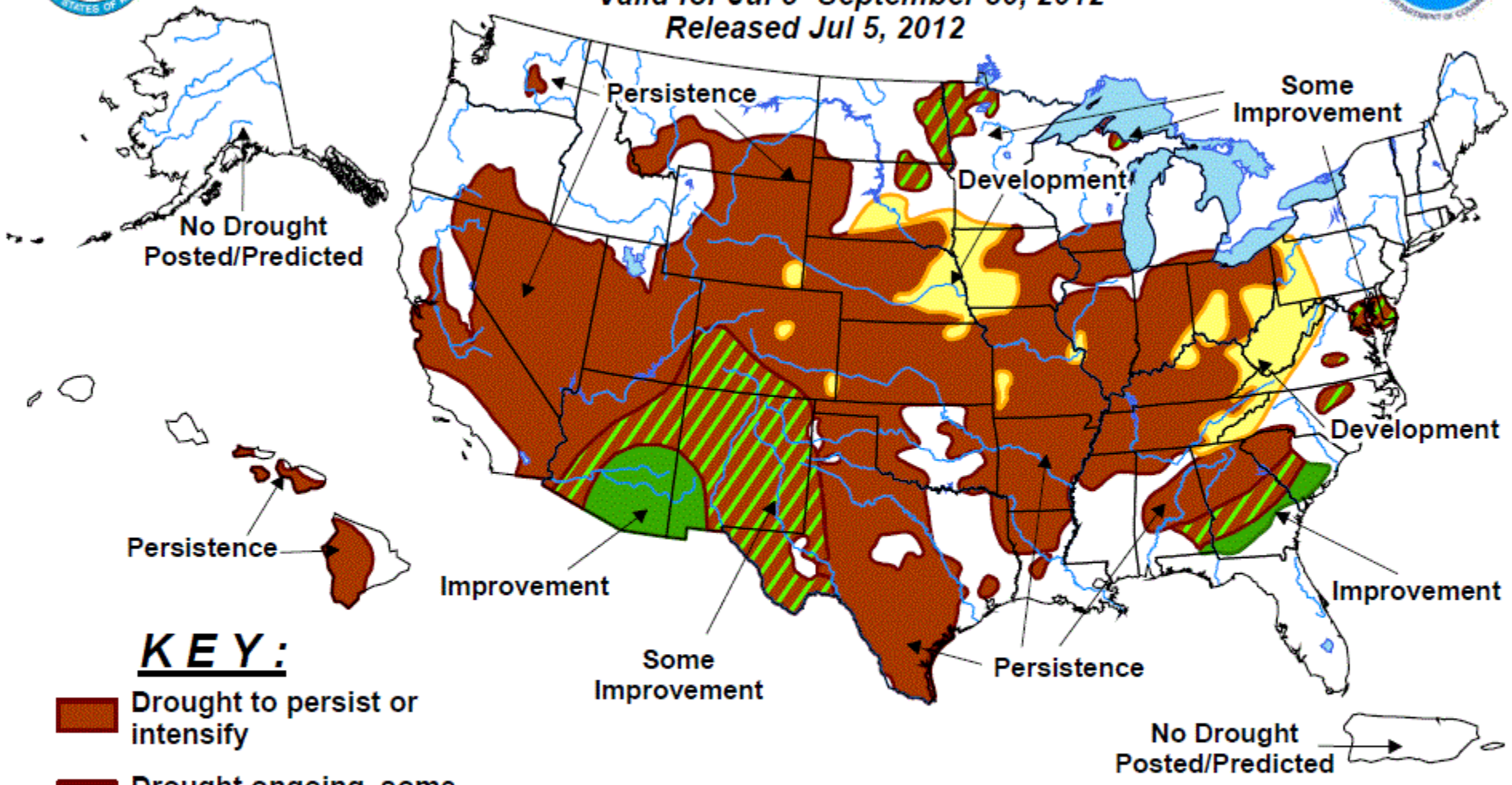
U.S. Seasonal Drought Outlook

Drought Tendency During the Valid Period

Valid for Jul 5 -September 30, 2012

Released Jul 5, 2012



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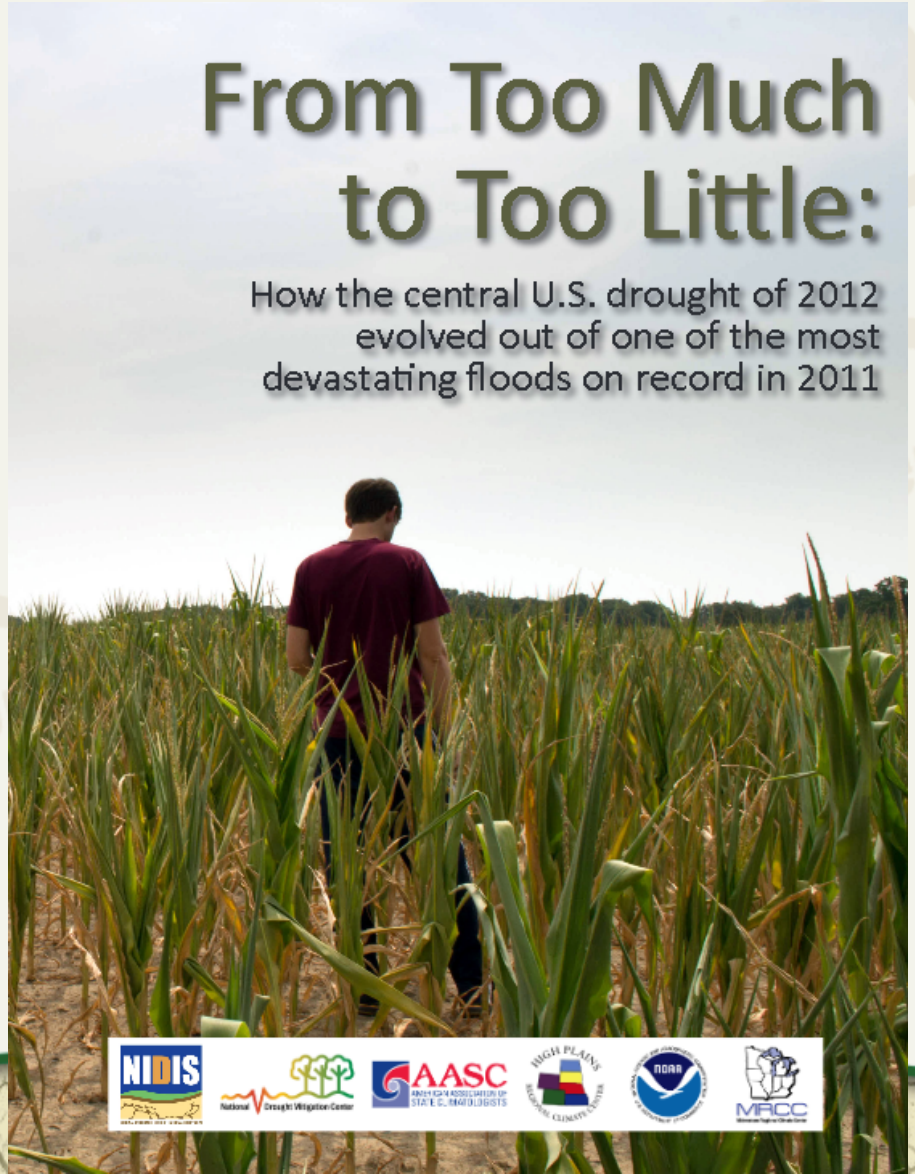
Assessment of 2011 and 2012

http://www.drought.gov/media/pgfiles/CentralUSDroughtAssessment2012.pdf



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Closing Points

- 2011 was very wet early but started to dry out into 2012
- Temperatures played a roll in how quickly and intense the drought in 2012 developed **"Flash Drought"**
- Forecasts are not always going to pick up on drought or flood signals, especially rapidly changing conditions
- Extreme events will become more frequent in a changing climate

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Any Questions ?

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Contact Information:

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402-472-6775

National Drought Mitigation Center
NOAA's Drought Risk Management Research Center
School of Natural Resources
University of Nebraska-Lincoln