



ILLINOIS STATE
WATER SURVEY
PRAIRIE RESEARCH INSTITUTE

Drought: The New Normal?

I hope not!

Jim Angel

State Climatologist



University of Illinois at Urbana-Champaign

Agricultural Drought

- Growing season
- Lack of soil moisture

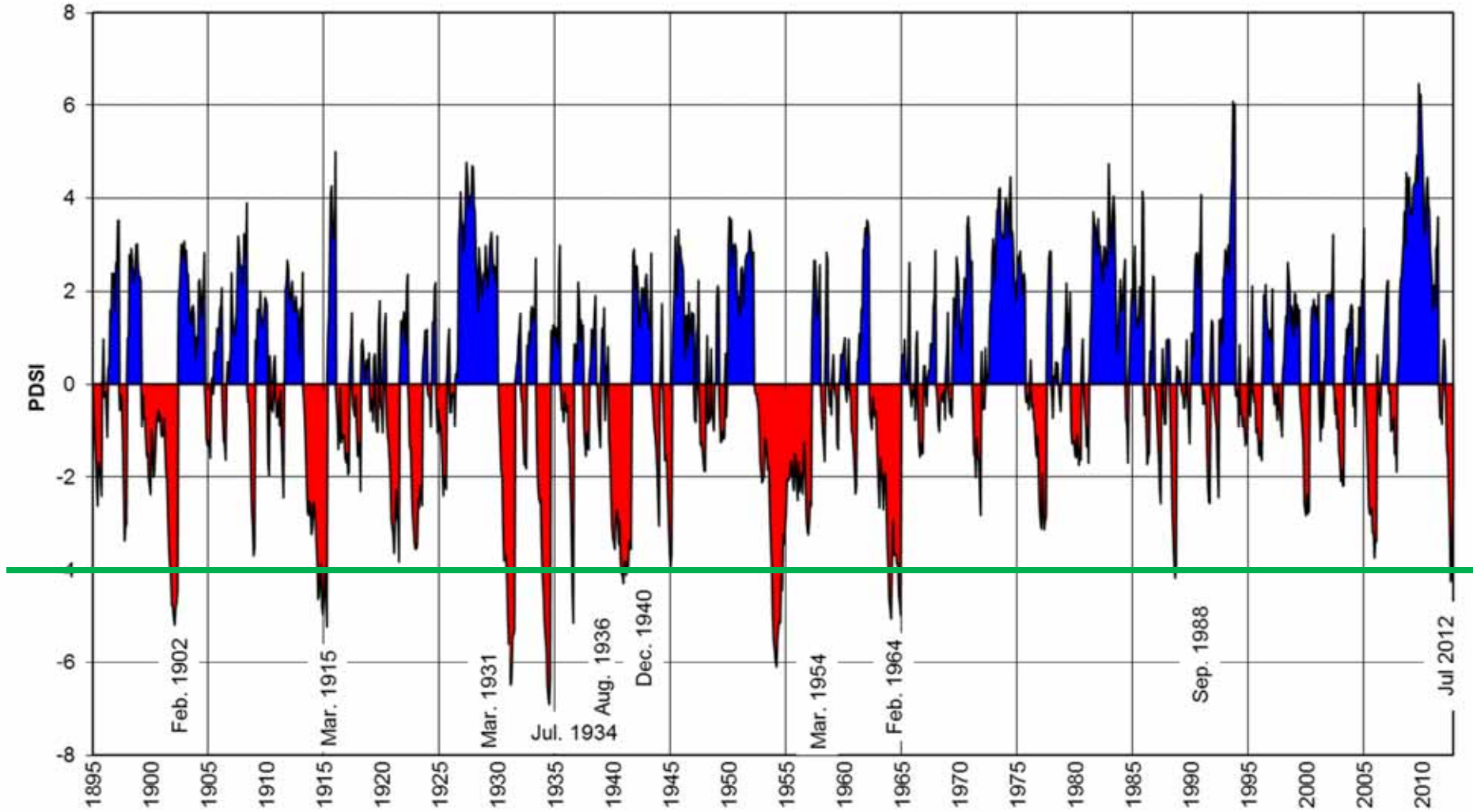


Hydrological Drought

- Streams/Rivers
- Lakes
- Groundwater



Palmer Drought Severity Index - Illinois

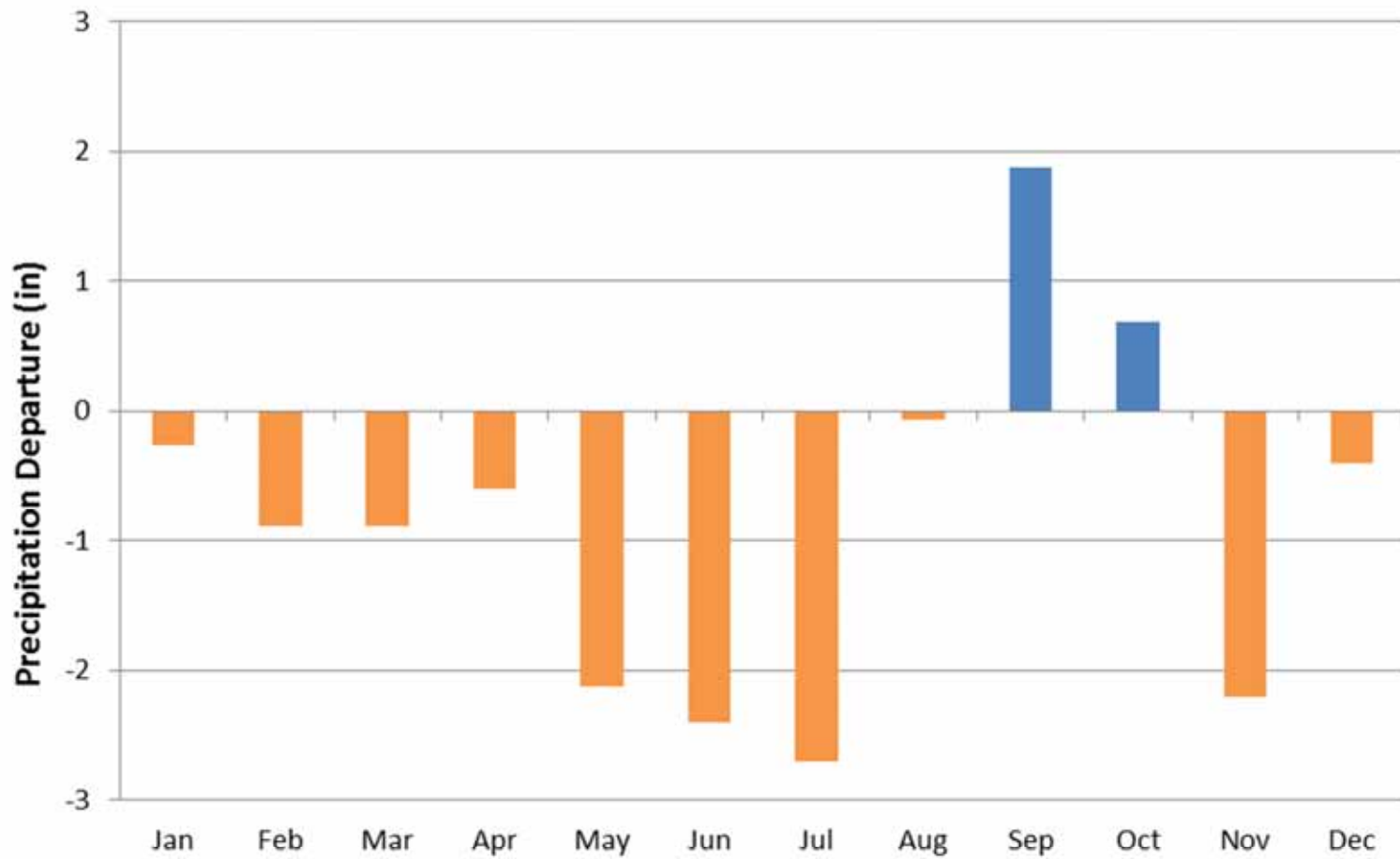


2012



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Monthly Precipitation Departure for Illinois

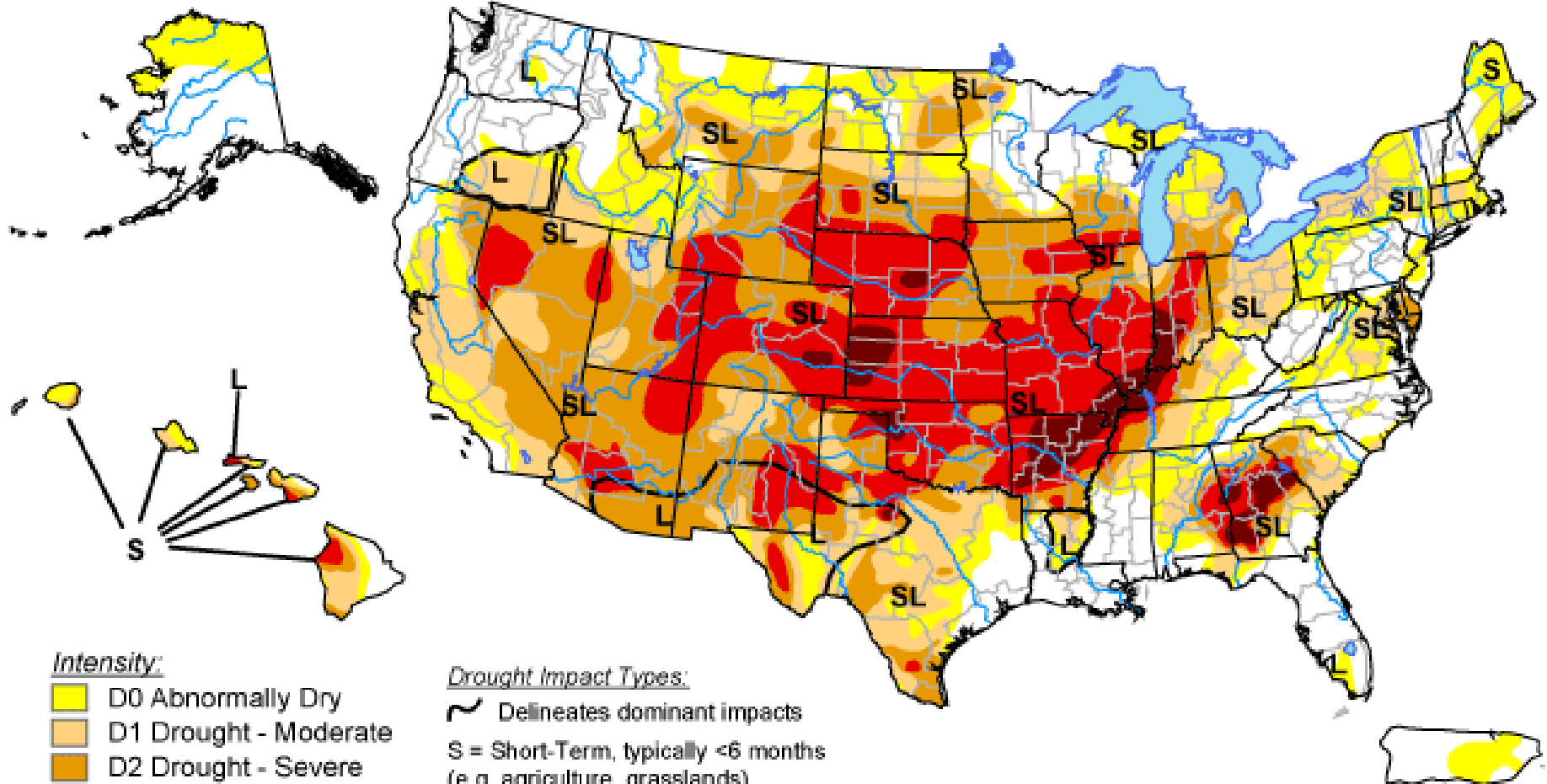


2012
(Illinois State Water Survey)






U.S. Drought Monitor

July 31, 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:

-  Delineates dominant impacts
- S = Short-Term, typically <6 months
(e.g. agriculture, grasslands)
- L = Long-Term, typically >6 months
(e.g. hydrology, ecology)

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

<http://droughtmonitor.unl.edu/>



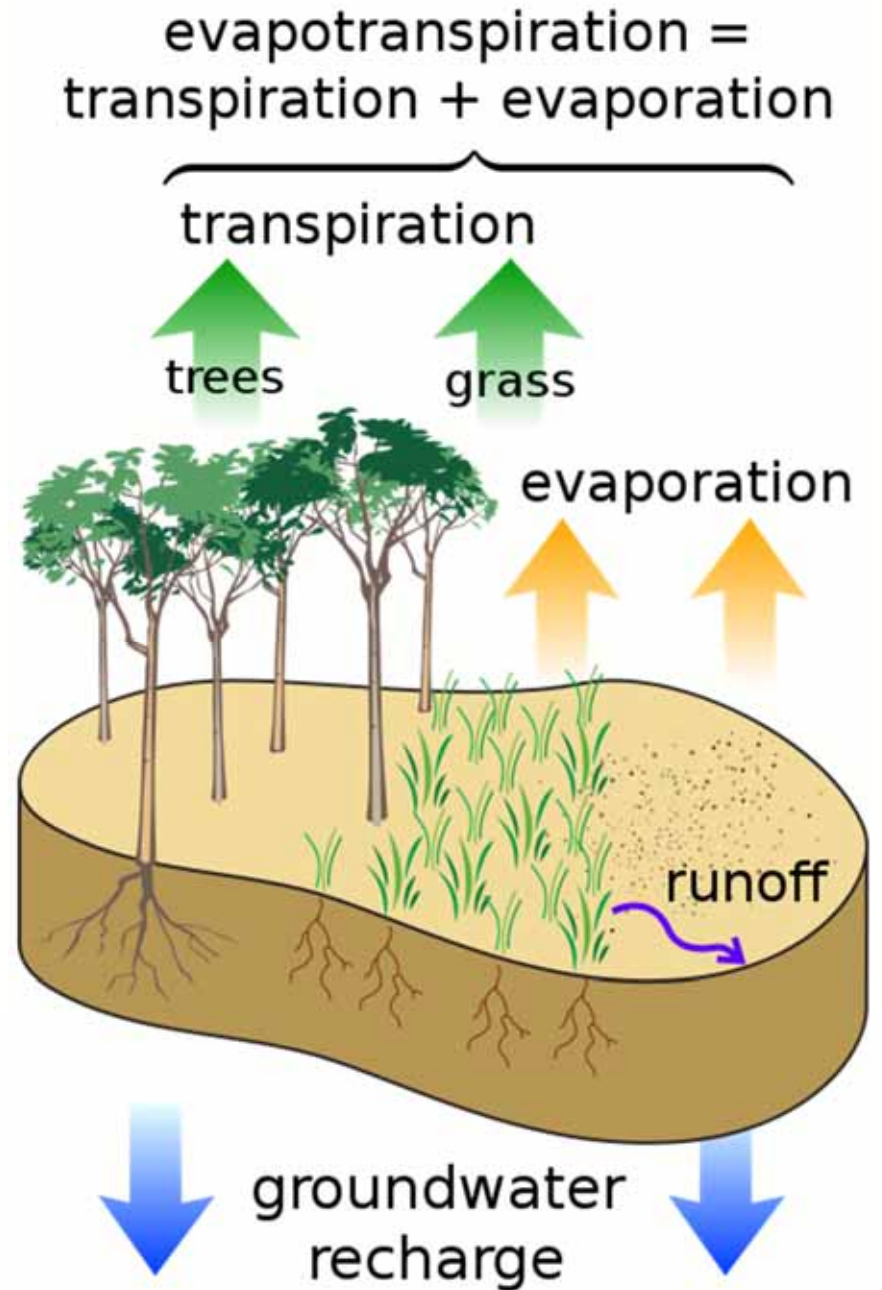
Released Thursday, August 2, 2012

Author: Mark Svoboda, National Drought Mitigation Center

Drought Feedback Loop

Drought feeds on itself
due to drop in:

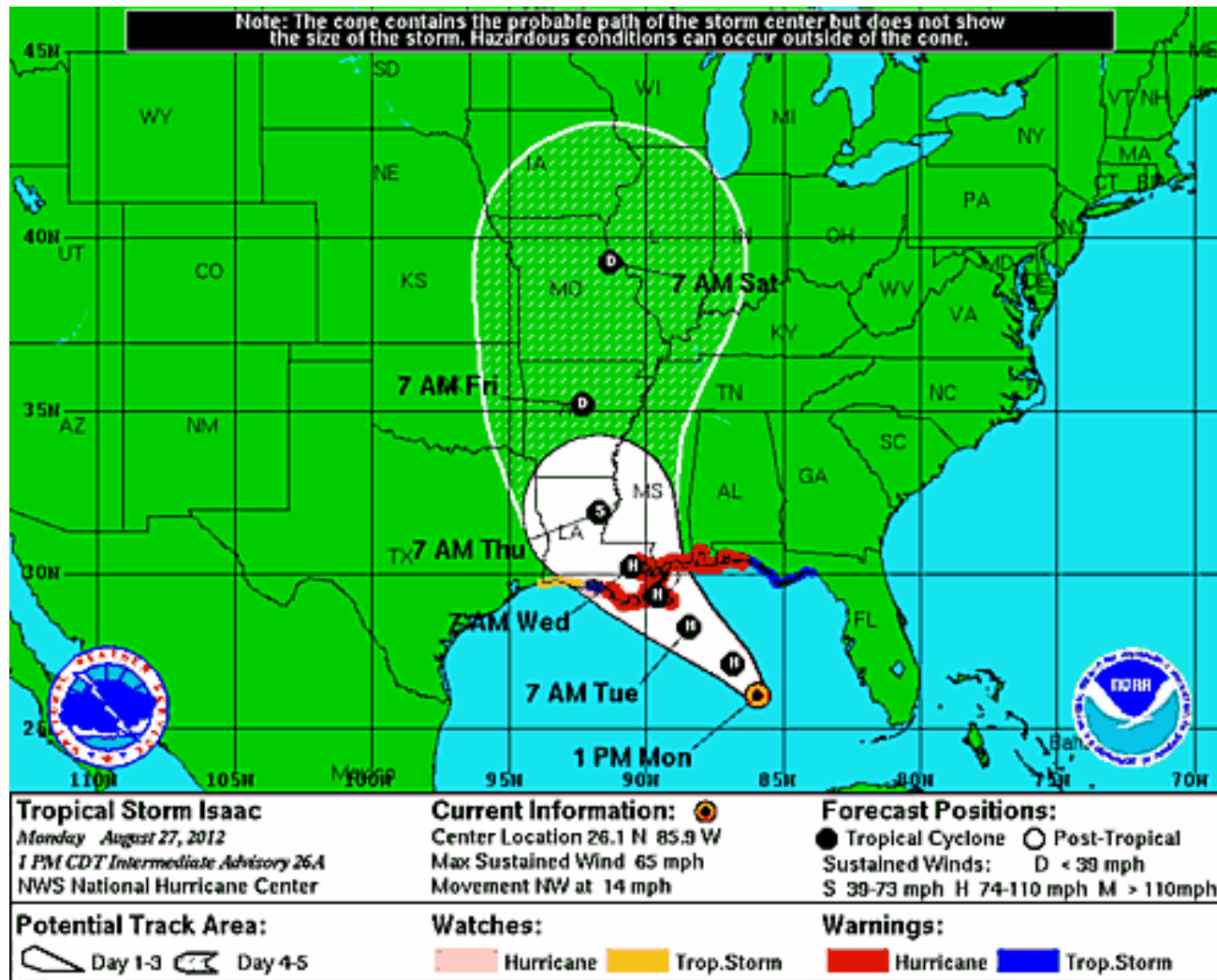
- Evaporation from the ground and water surfaces
- Transpiration from plants



Evaporation



Preparing for a slow recovery ... until

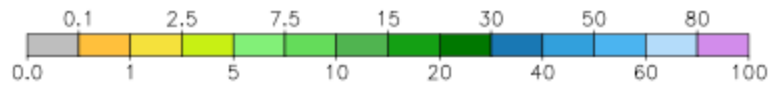
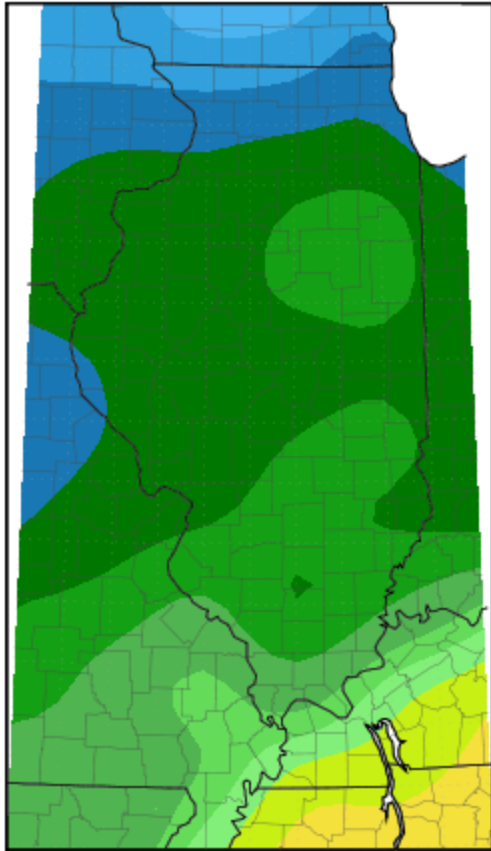


2013



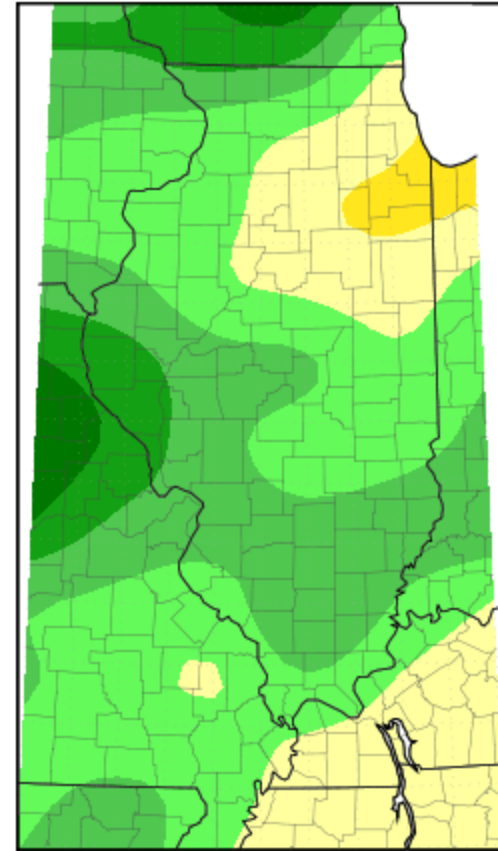
Snowfall

Accumulated Snowfall (in)
October 1, 2012 to March 28, 2013



Midwestern Regional Climate Center
MRCC Applied Climate System
Generated at: 3/28/2013 10:24:19 PM CDT

Accumulated Snowfall (in): Departure from Mean
October 1, 2012 to March 28, 2013



Mean period is 1981-2010.

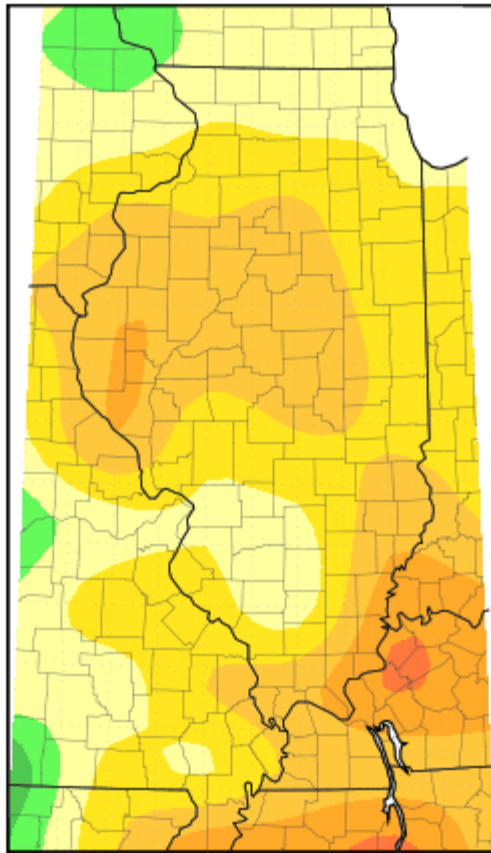


Midwestern Regional Climate Center
MRCC Applied Climate System
Generated at: 3/28/2013 10:23:29 PM CDT

Start of the Year

Accumulated Precipitation (in): Departure from Mean
January 1, 2012 to April 4, 2012

2012



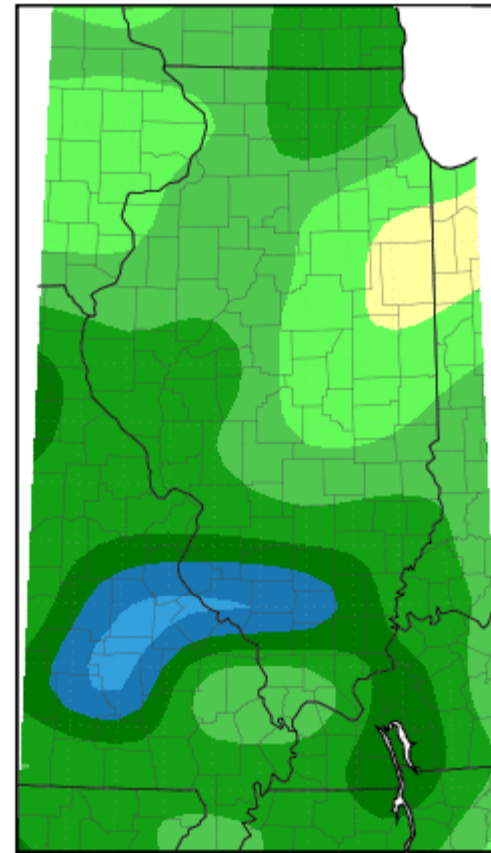
Mean period is 1981-2010.



Midwestern Regional Climate Center
MRCC Applied Climate System
Generated at: 4/4/2013 10:34:44 PM CDT

Accumulated Precipitation (in): Departure from Mean
January 1, 2013 to April 4, 2013

2013

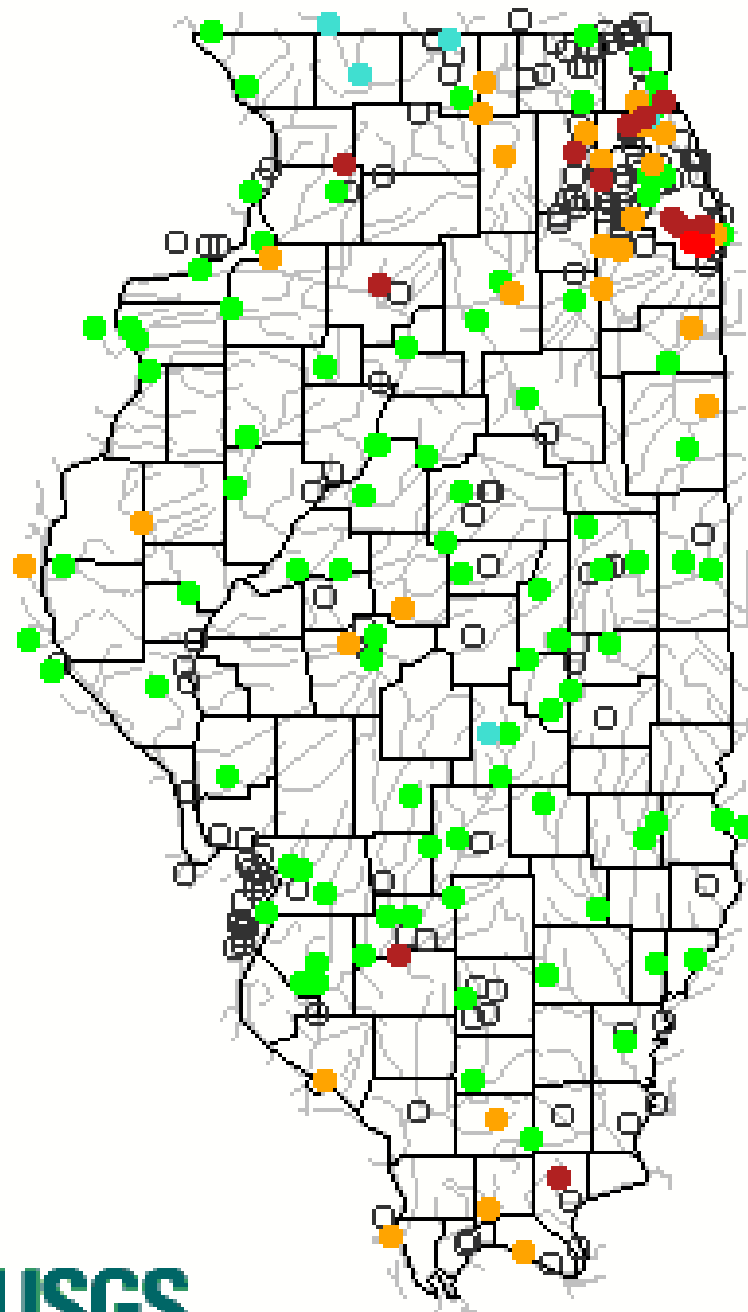


Mean period is 1981-2010.



Midwestern Regional Climate Center
MRCC Applied Climate System
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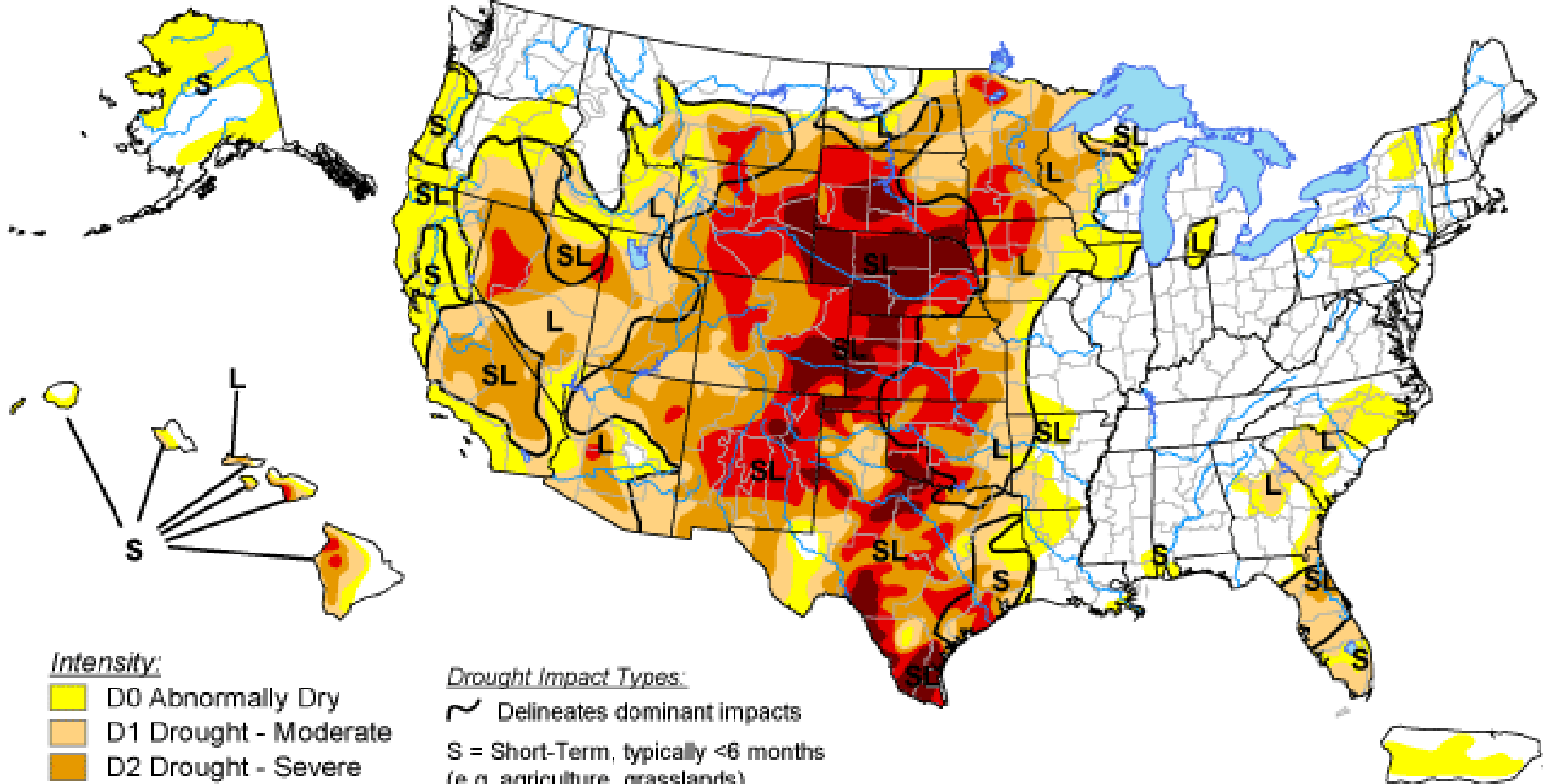
Thursday, April 04, 2013 23:30ET








U.S. Drought Monitor

April 2, 2013


Valid 7 a.m. EDT



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-  D1 Drought - Moderate
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-  D3 Drought - Extreme
-  D4 Drought - Exceptional

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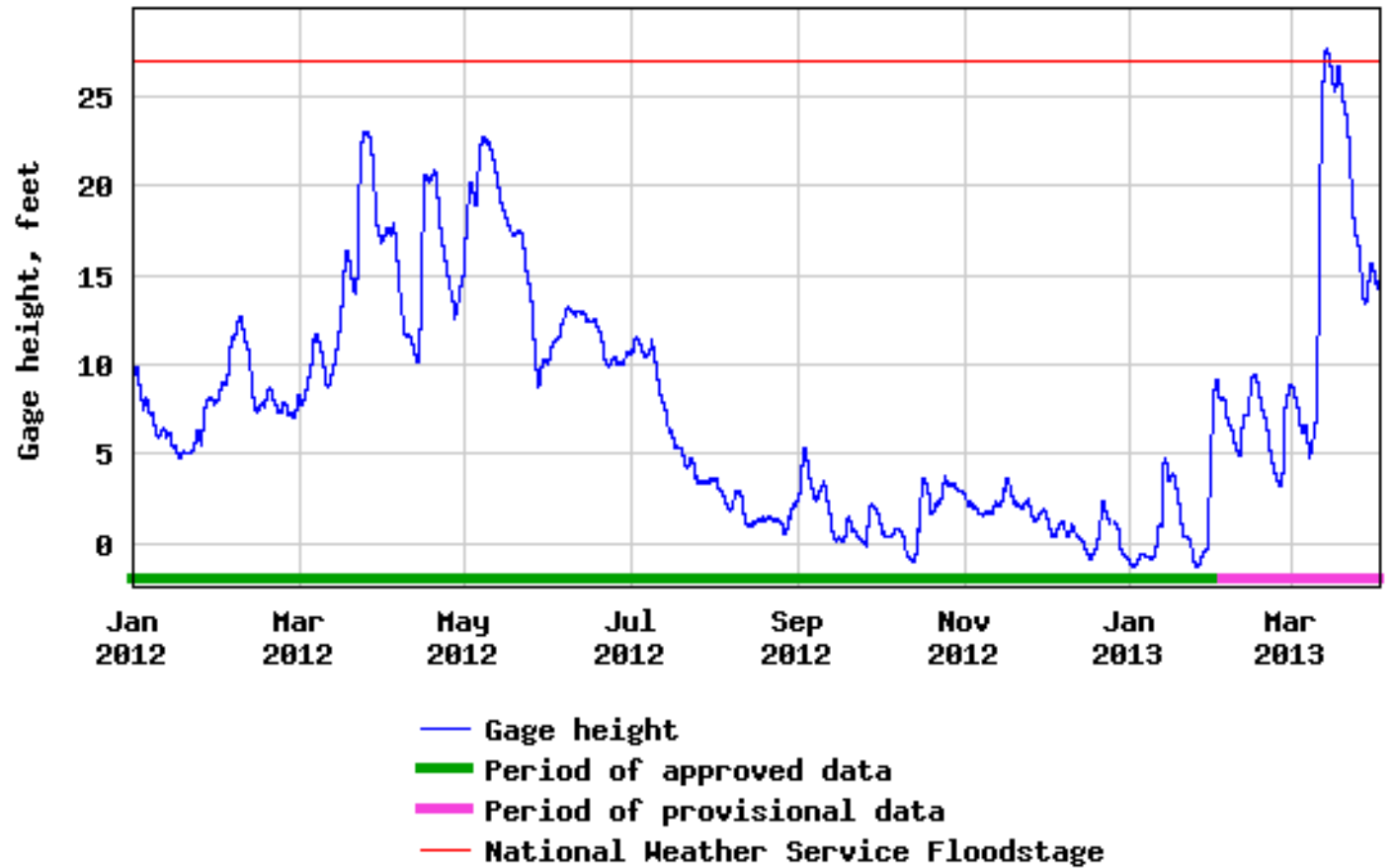
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<http://droughtmonitor.unl.edu/>



Released Thursday, April 4, 2013
Author: Rich Tinker, NOAA/NWS/NCEP/CPC

USGS 07020500 Mississippi River at Chester, IL



Current Drought Situation

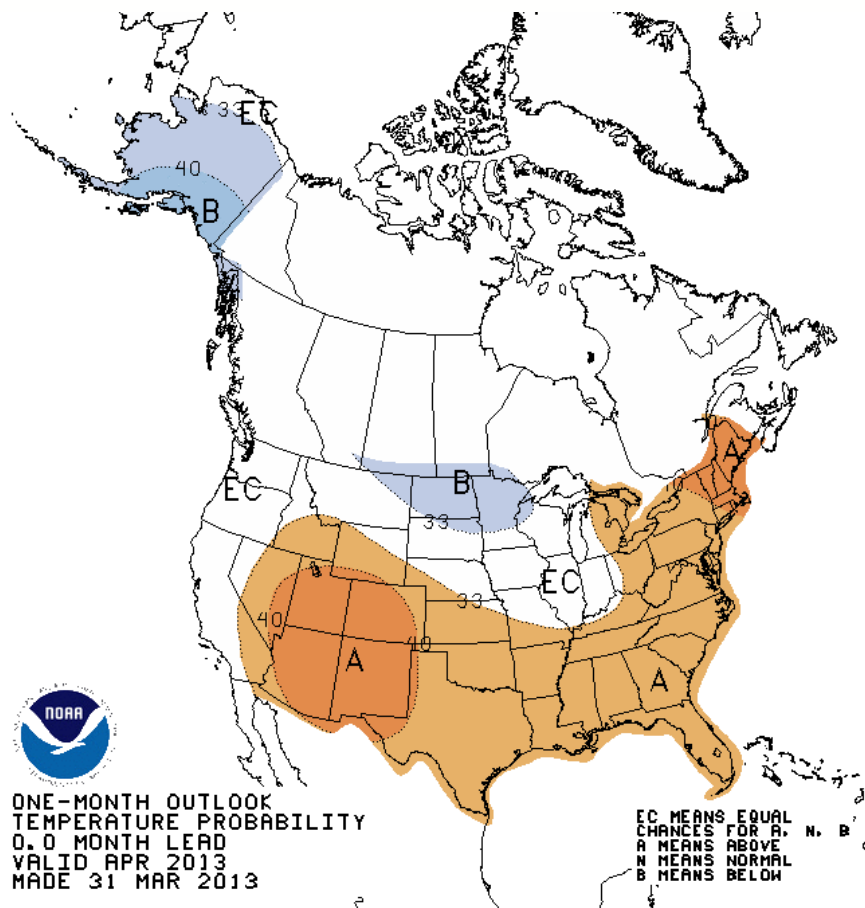
- Missouri River Basin
 - 75% of the basin is in drought
- Upper Mississippi River Basin (above St. Louis)
 - 52% of the basin is in drought

Before We Talk About The Future ...

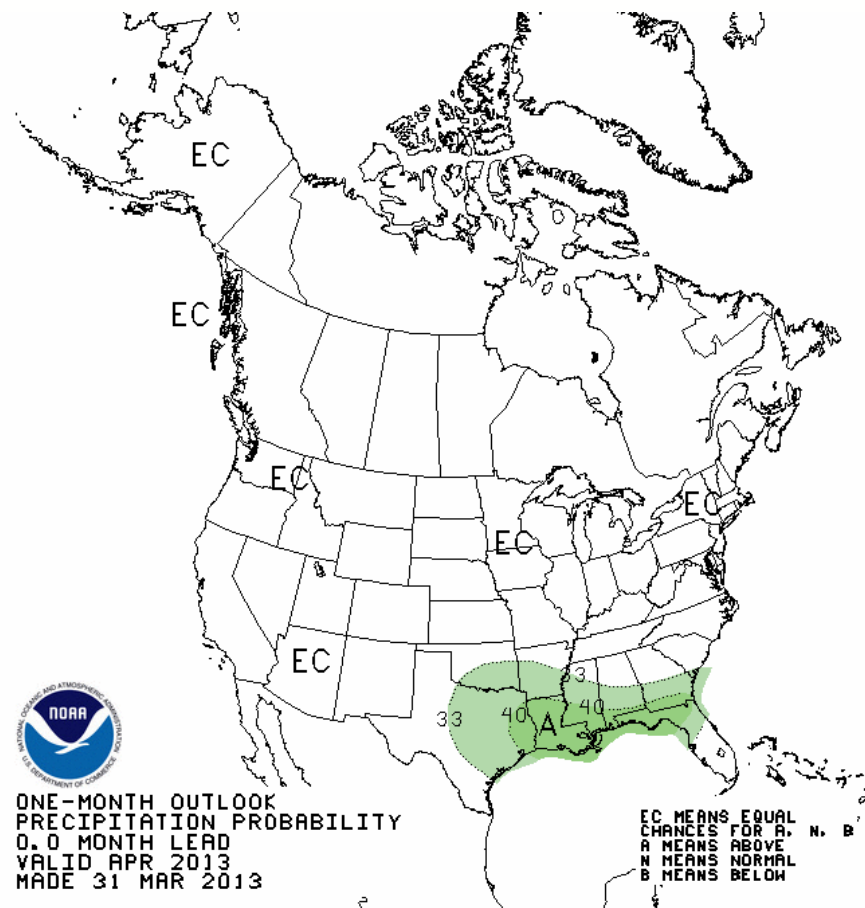
March 2012 was 55.3°F (+14.2°F), warmest on record.

March 2013 was 34.1°F (-7.0°F), 11th coldest on record.

April Temperature and Precipitation Probabilities

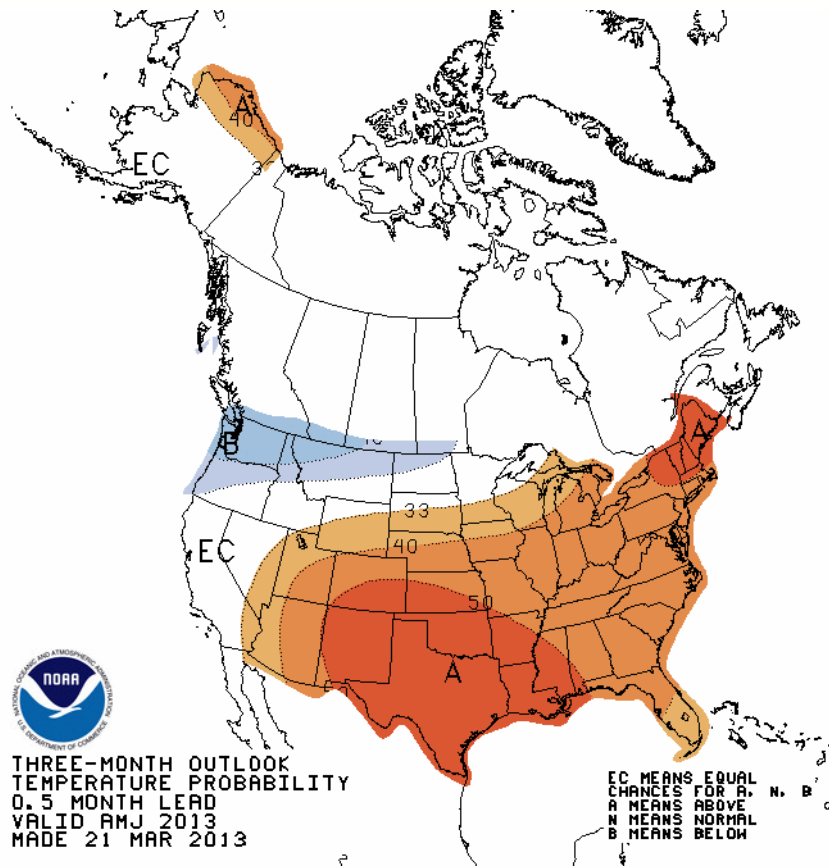


Temperature

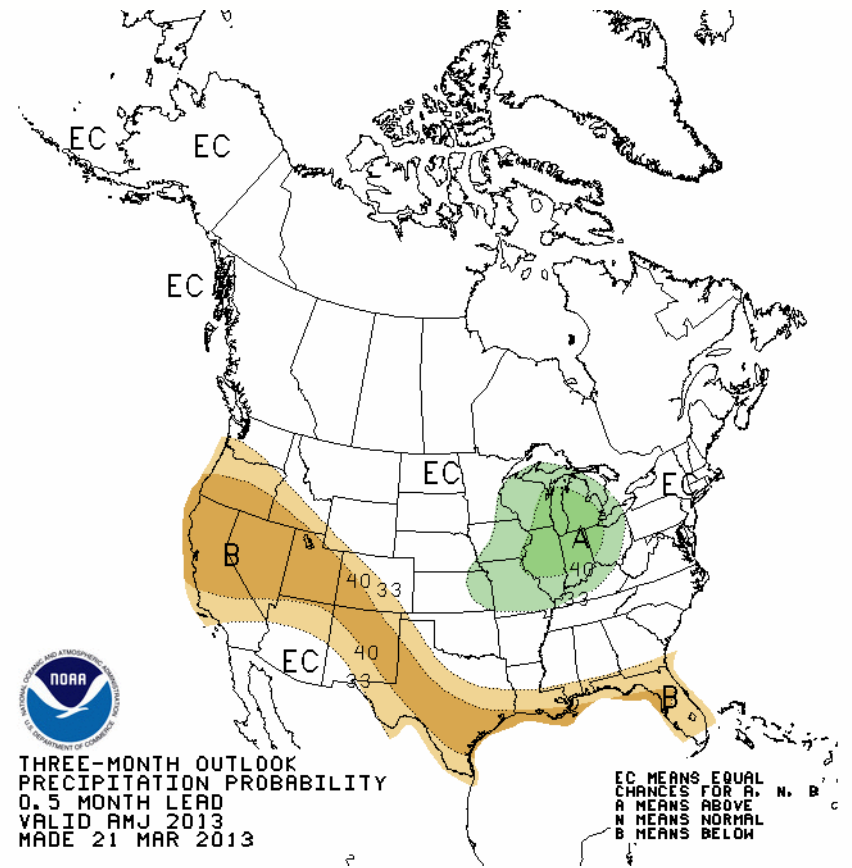


Precipitation

3 Month Temperature and Precipitation Probabilities (April-June)

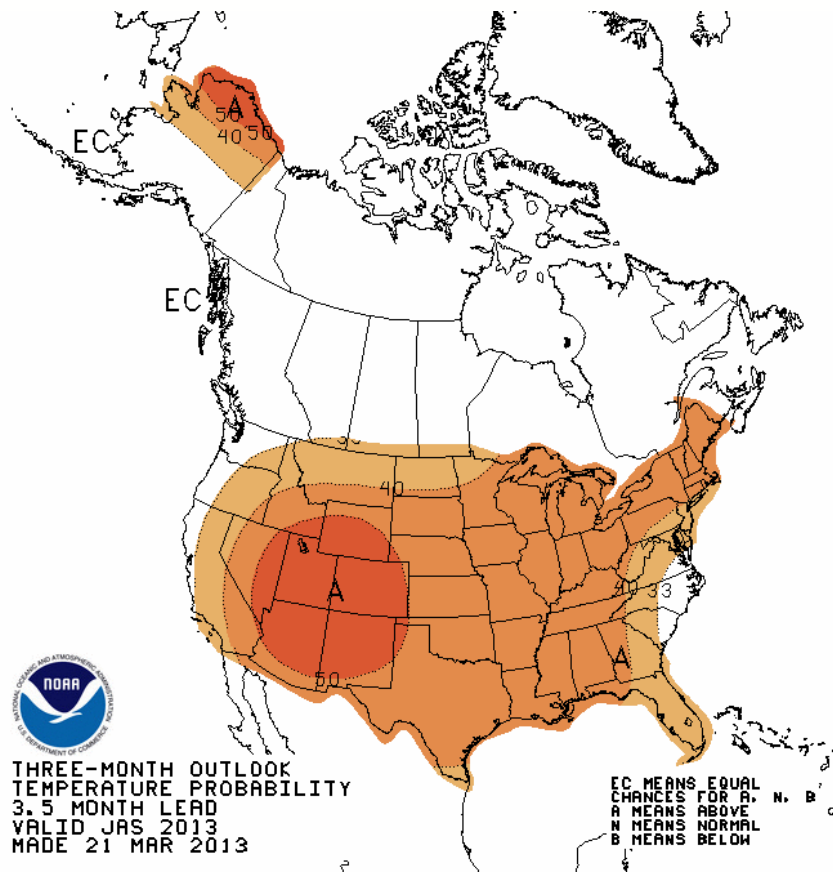


Temperature

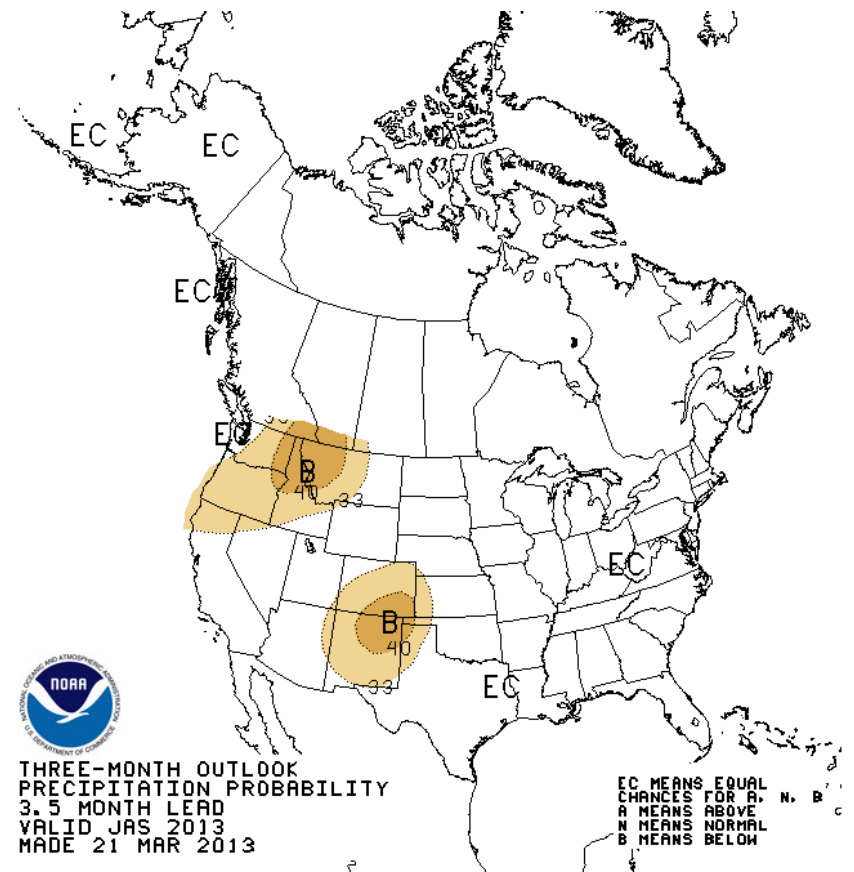


Precipitation

3 Month Temperature and Precipitation Probabilities (July-September)



Temperature



Precipitation



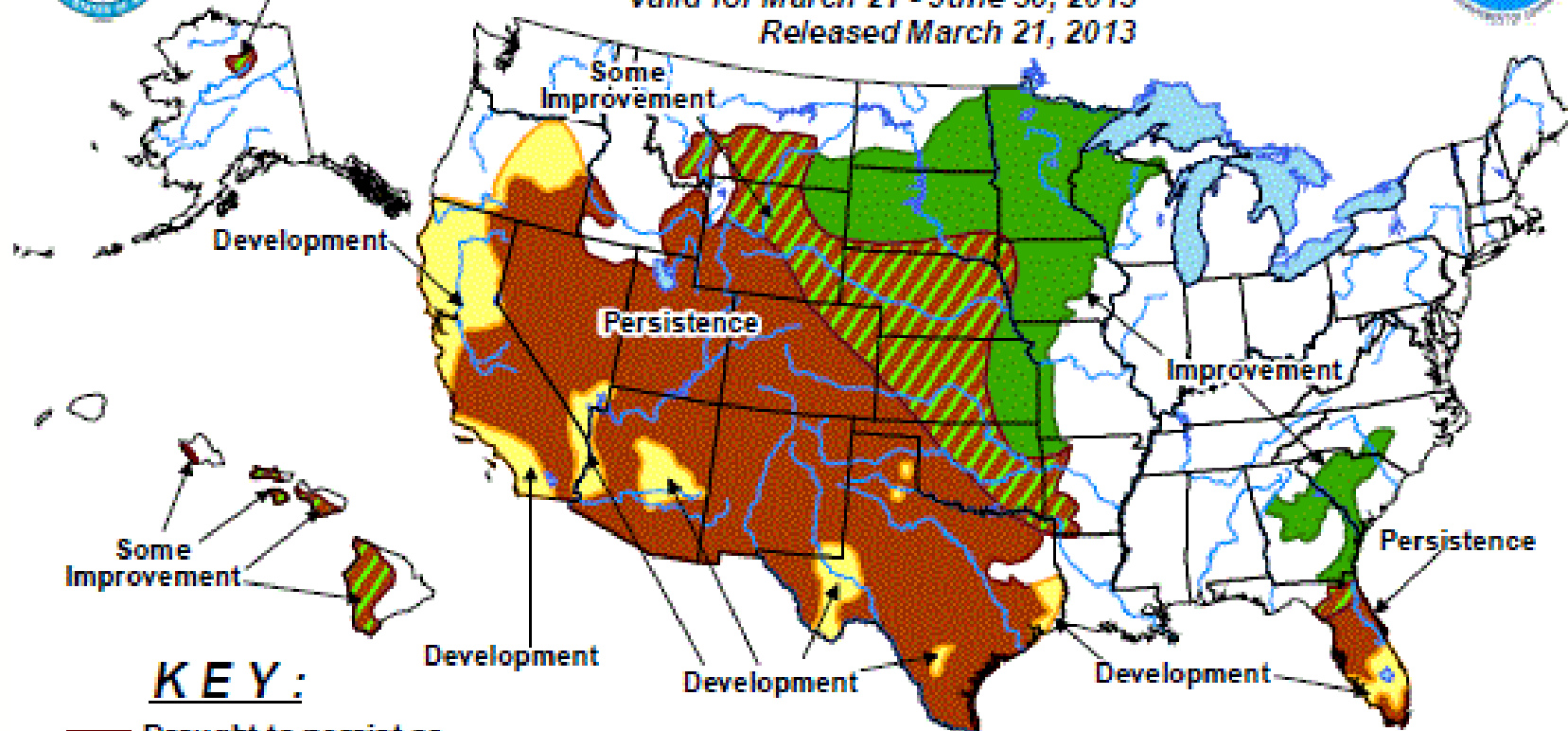
Some Improvement

U.S. Seasonal Drought Outlook





Drought Tendency During the Valid Period


Valid for March 21 - June 30, 2013

Released March 21, 2013



KEY:

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

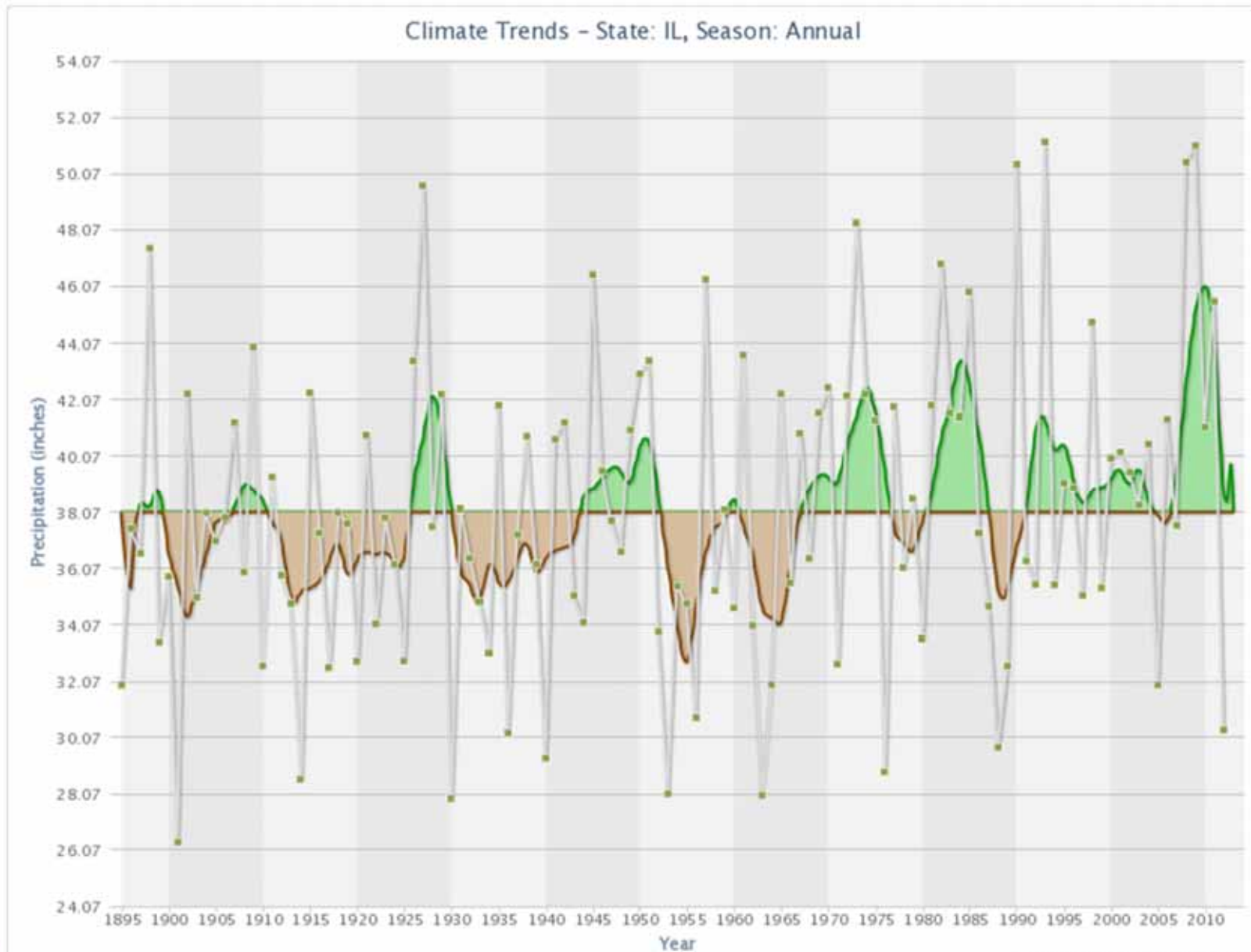
No Drought Posted/Predicted 

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.



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Annual Precipitation for Illinois 1895-2012



Questions?