Central Region Drought Outlook
March 21, 2013

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Photo taken Feb 19, 2013

Photo taken Mar 10, 2013

Notable surface water recovery to a fishing lake in mid-Missouri after 3 significant precipitation events, including two snow storms, deposited nearly 5-inches of total water in less than 3 weeks.

National Drought Mitigation Center

NOAA
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
U.S. DEPARTMENT OF COMMERCE

REGIONAL CLIMATE CENTERS

AASC
AMERICAN ASSOCIATION OF STATE CLIMATOLOGISTS

General Information

* **Providing climate services to the Central Region**
  * Collaboration Activity Between:
    * Pat Guinan (Missouri Climate Center and State Climatologist)
    * Doug Kluck & John Eise (NOAA)
    * American Association of State Climatologists
    * Midwest and High Plains Regional Climate Centers
    * National Drought Mitigation Center

* **Next Climate/Drought Outlook Webinar**
  * April 18th, 2013 (1 PM CDT)

* **Access to Future Climate Webinars and Information**
* http://www.drought.gov/drought/content/regional-programs/regional-drought-webinars

* **Operator Assistance for questions at the end**

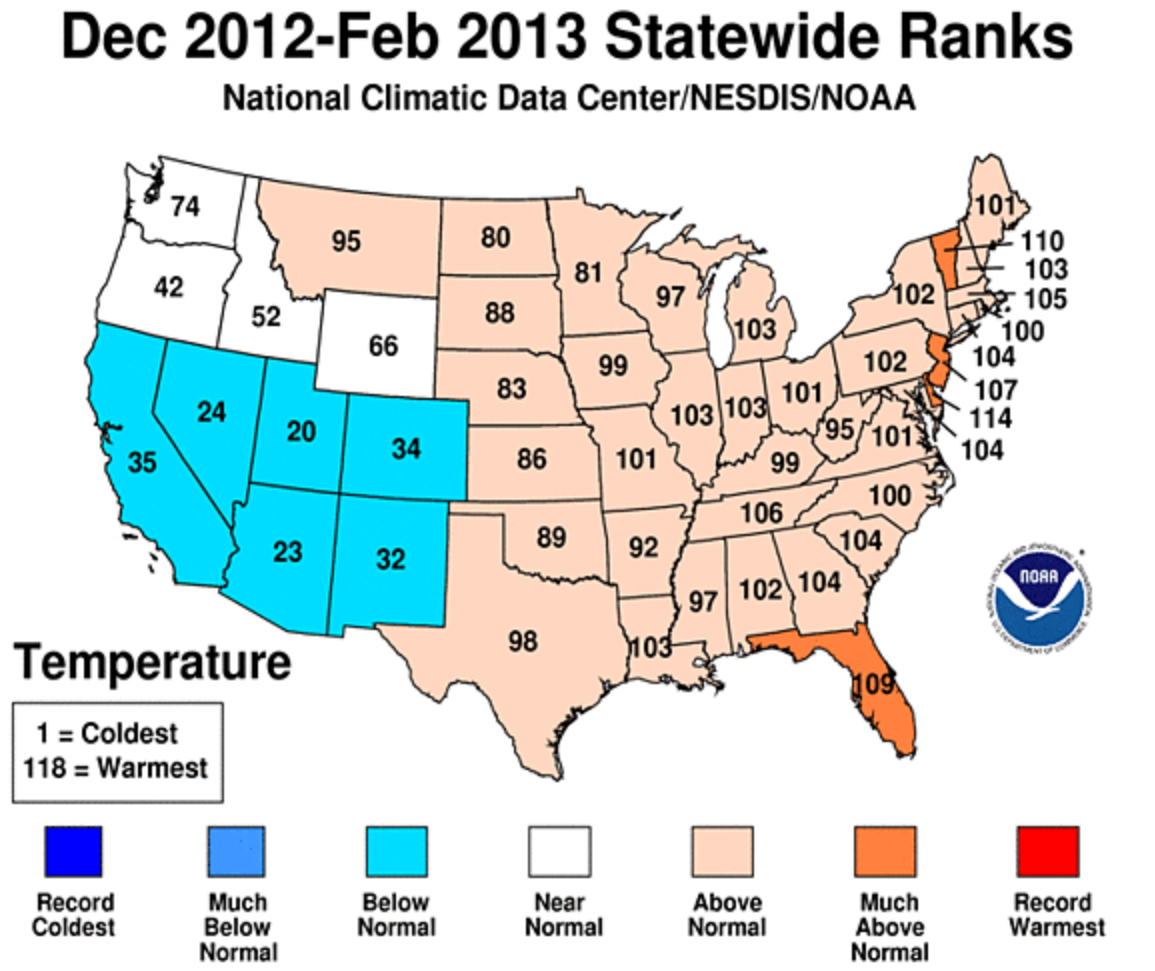
Agenda

* **Winter recap and current conditions**
* **Current impacts**
* **Outlooks**
* **Questions/Comments**

NRCS photo, Dust Bowl 1938

Winter Temperature Recap

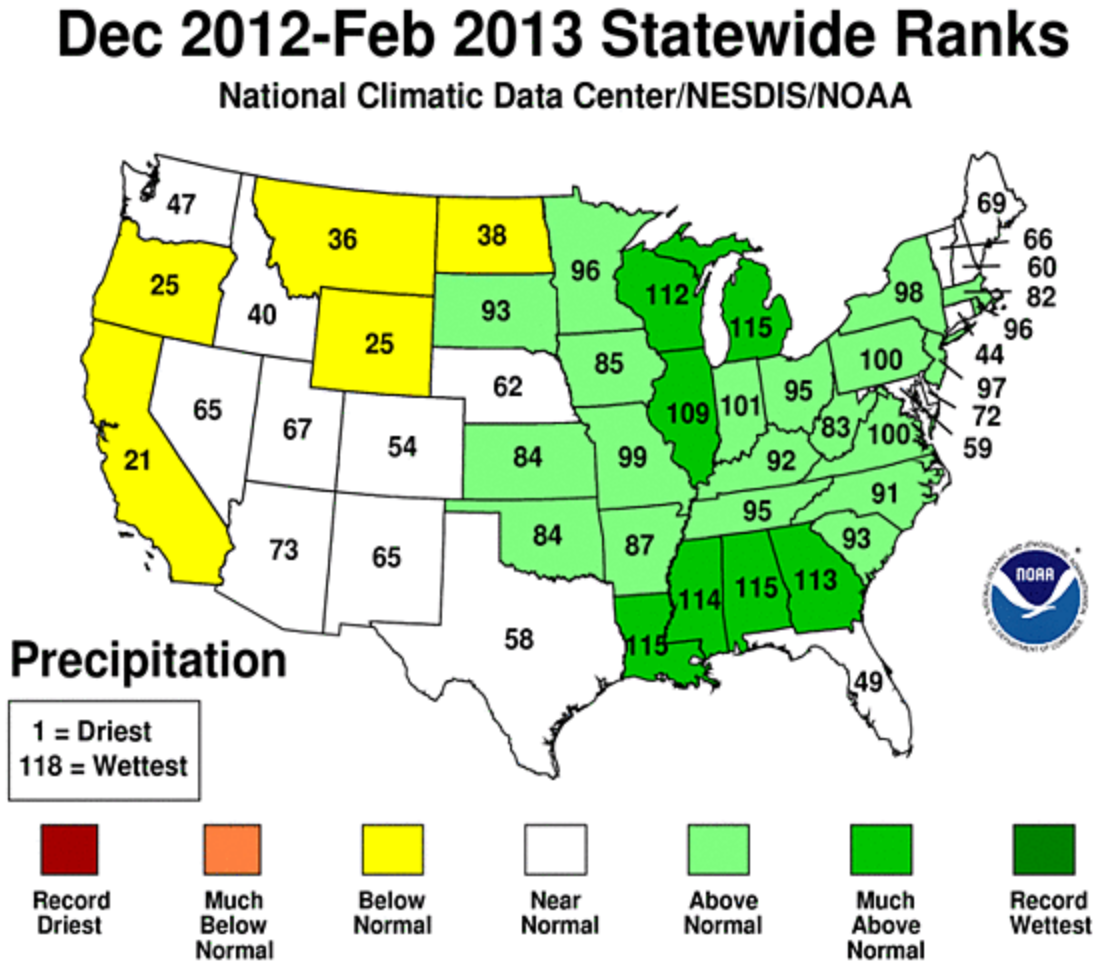
The contiguous United States average winter temperature was 1.9°F above the 20th century average, making it the 20th warmest winter on record.



http://www.ncdc.noaa.gov/sotc/service/national/Statewidetrank/201212-201302.gif

Winter Precipitation Recap

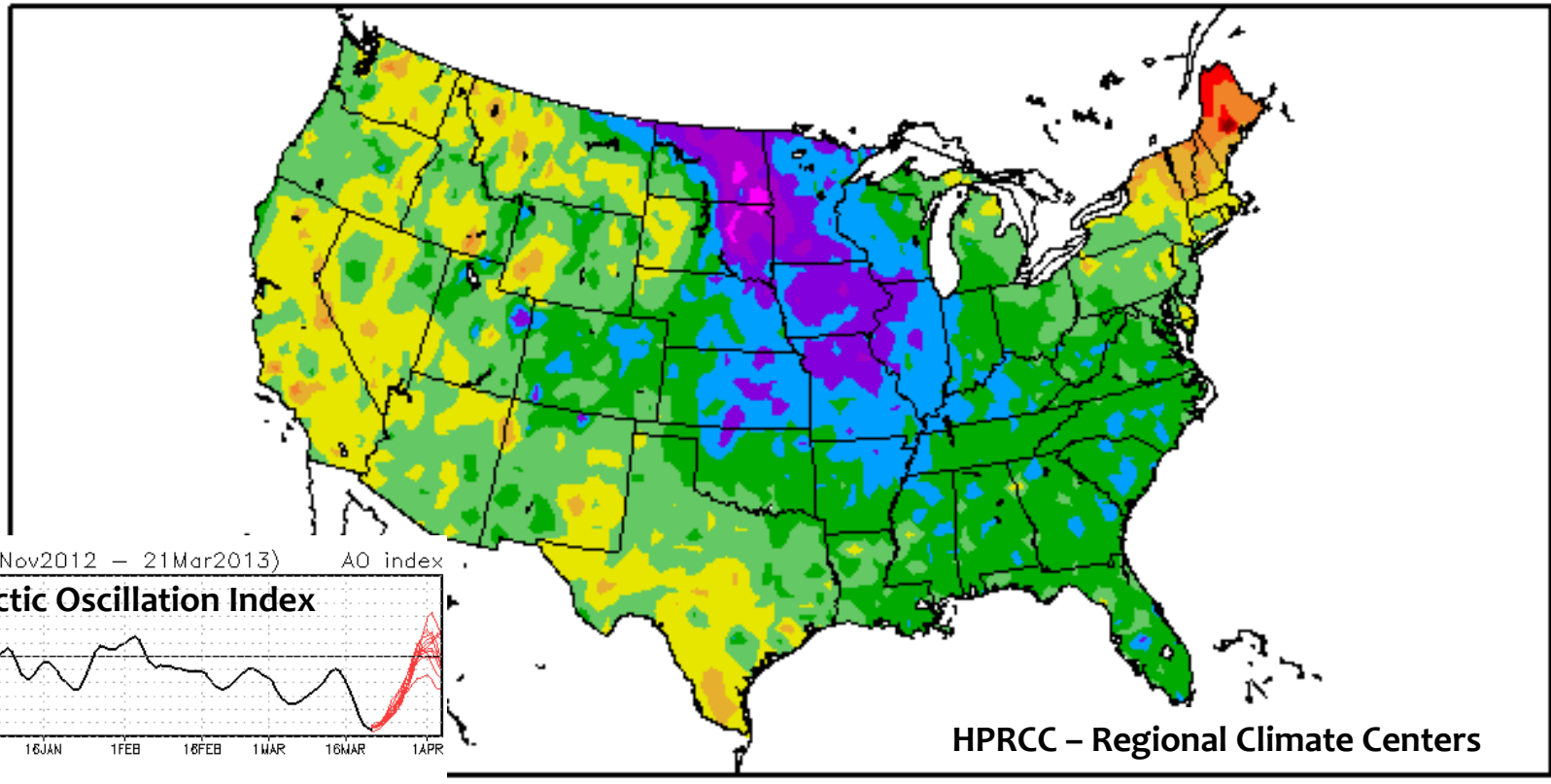
The contiguous United States winter precipitation average was 0.63 inches above the 20th century average, making it the 24th wettest winter on record.



http://www.ncdc.noaa.gov/sotc/service/national/Statewideprank/201212-201302.gif

Most recent 30-day temperature departures

Departure from Normal Temperature (°F)
Feb 19, 2013 – Mar 20, 2013

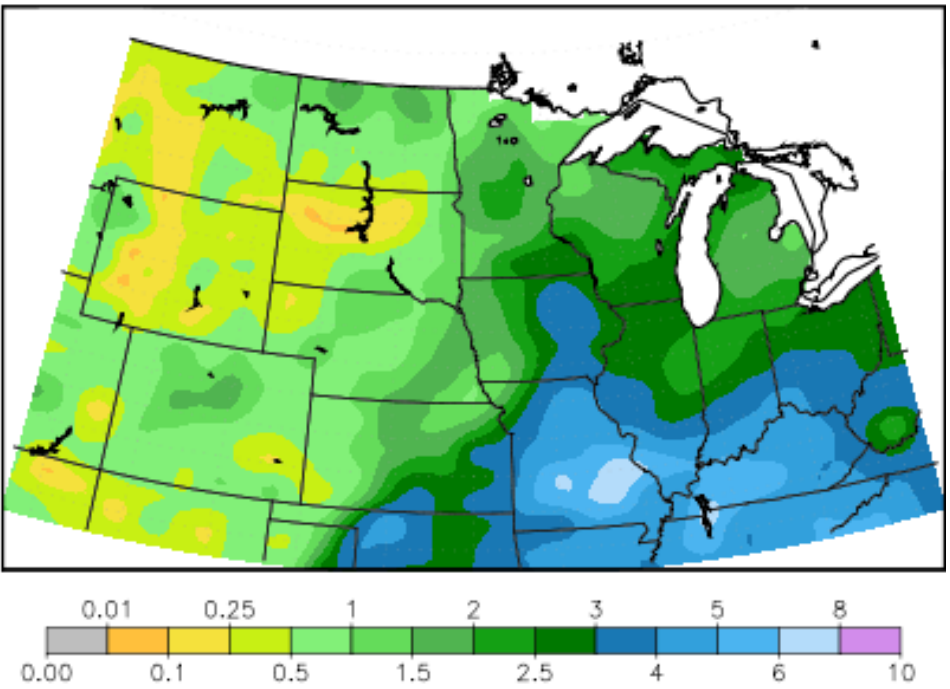


Climate Prediction Center

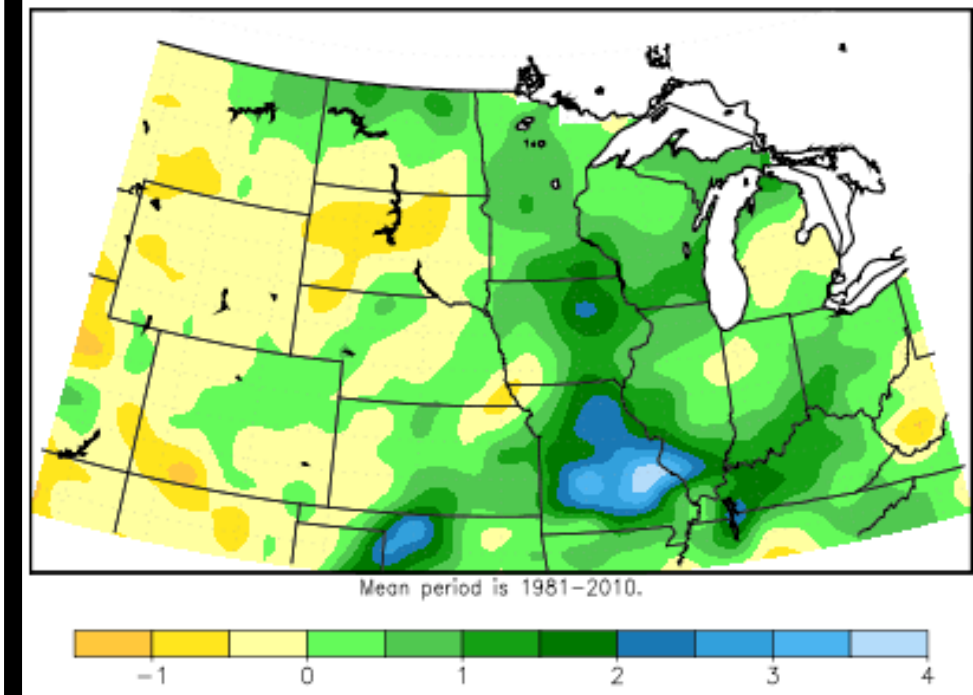
http://www.hprcc.unl.edu/maps/current/index.php?action=update_product&product=TDept

Most recent 30-day precipitation and precipitation departures

Accumulated Precipitation (in)
Feb 21, 2013 to Mar 20, 2013

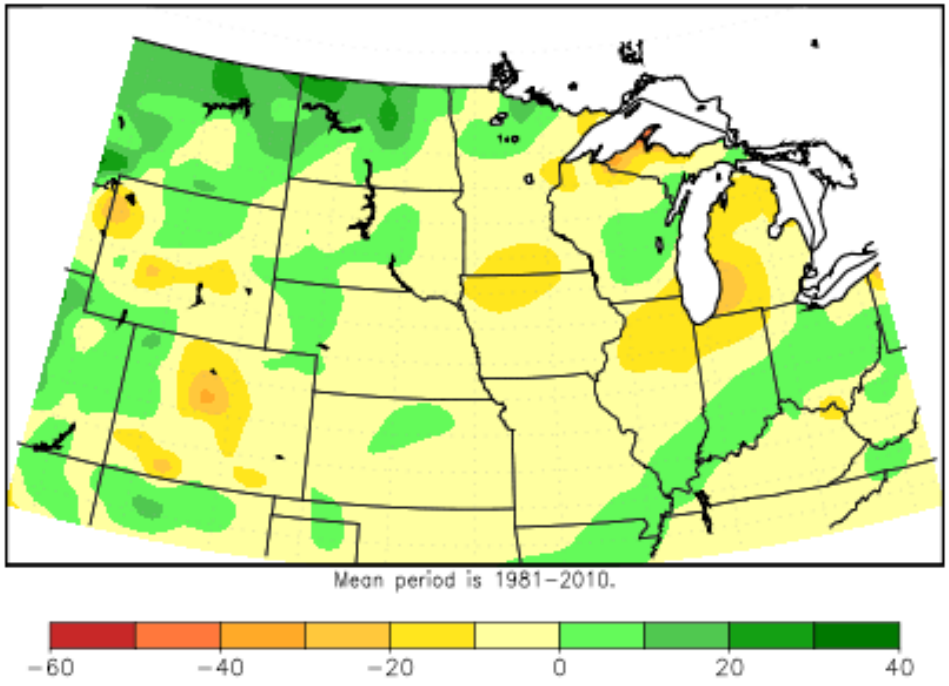


Accumulated Precipitation (in): Departure from Mean
Feb 21, 2013 to Mar 20, 2013

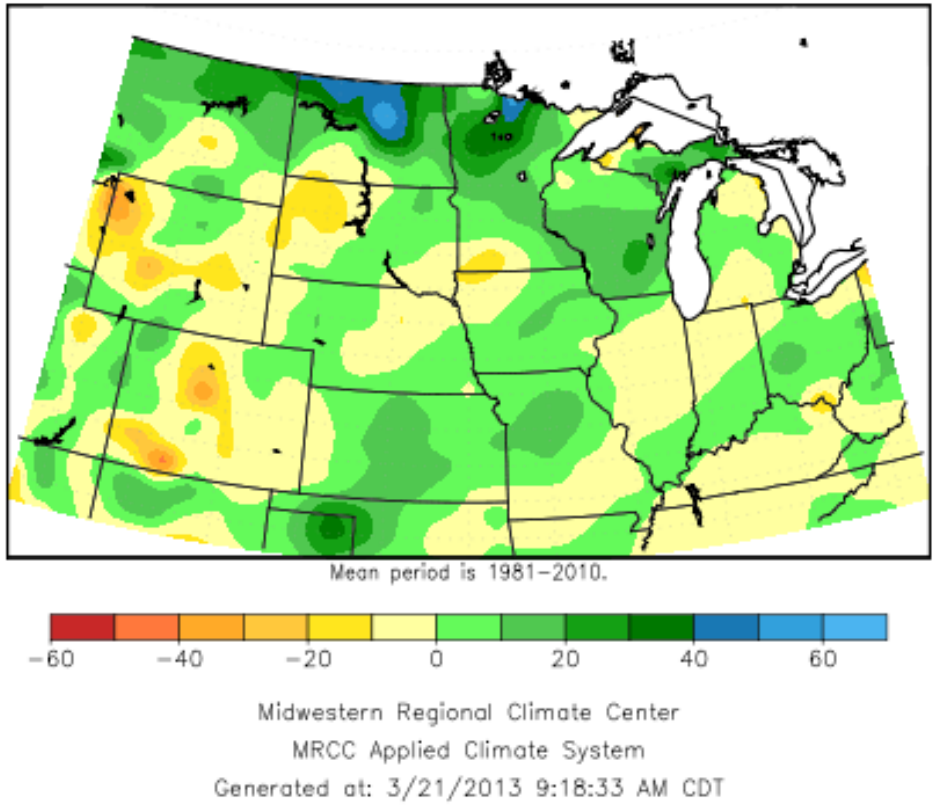


Snowfall- Departure from Mean

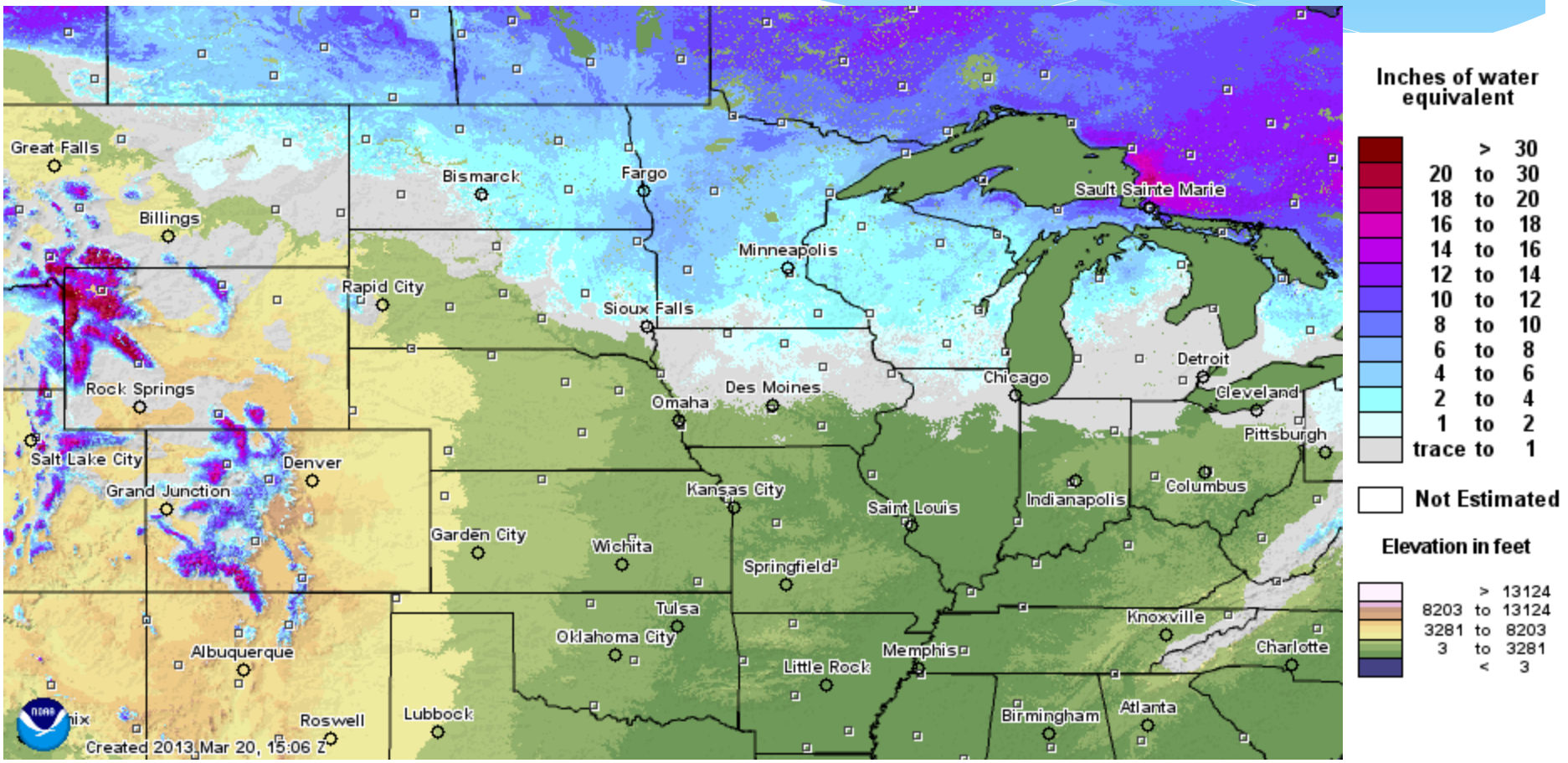
Accumulated Snowfall (in): Departure from Mean
Oct 1, 2012 to Jan 31, 2013



Accumulated Snowfall (in): Departure from Mean
Oct 1, 2012 to Mar 20, 2013



Modeled Snow Water Equivalent (in.) March 21, 2013

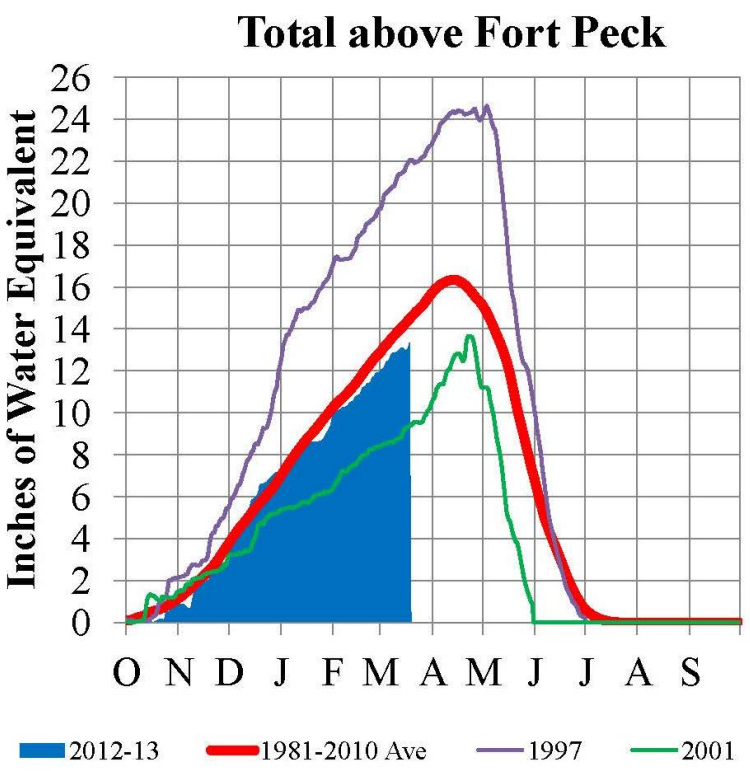


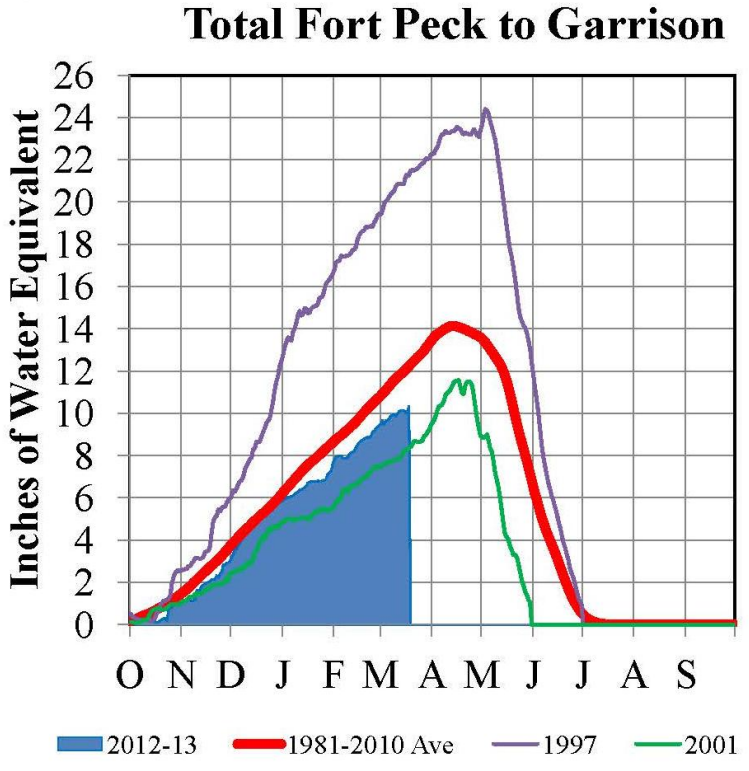
http://www.nohrsc.noaa.gov/nsa/

Missouri River Conditions

Missouri River Basin – Mountain Snowpack Water Content
2012-2013 with comparison plots from 1997* and 2001*

March 19, 2013



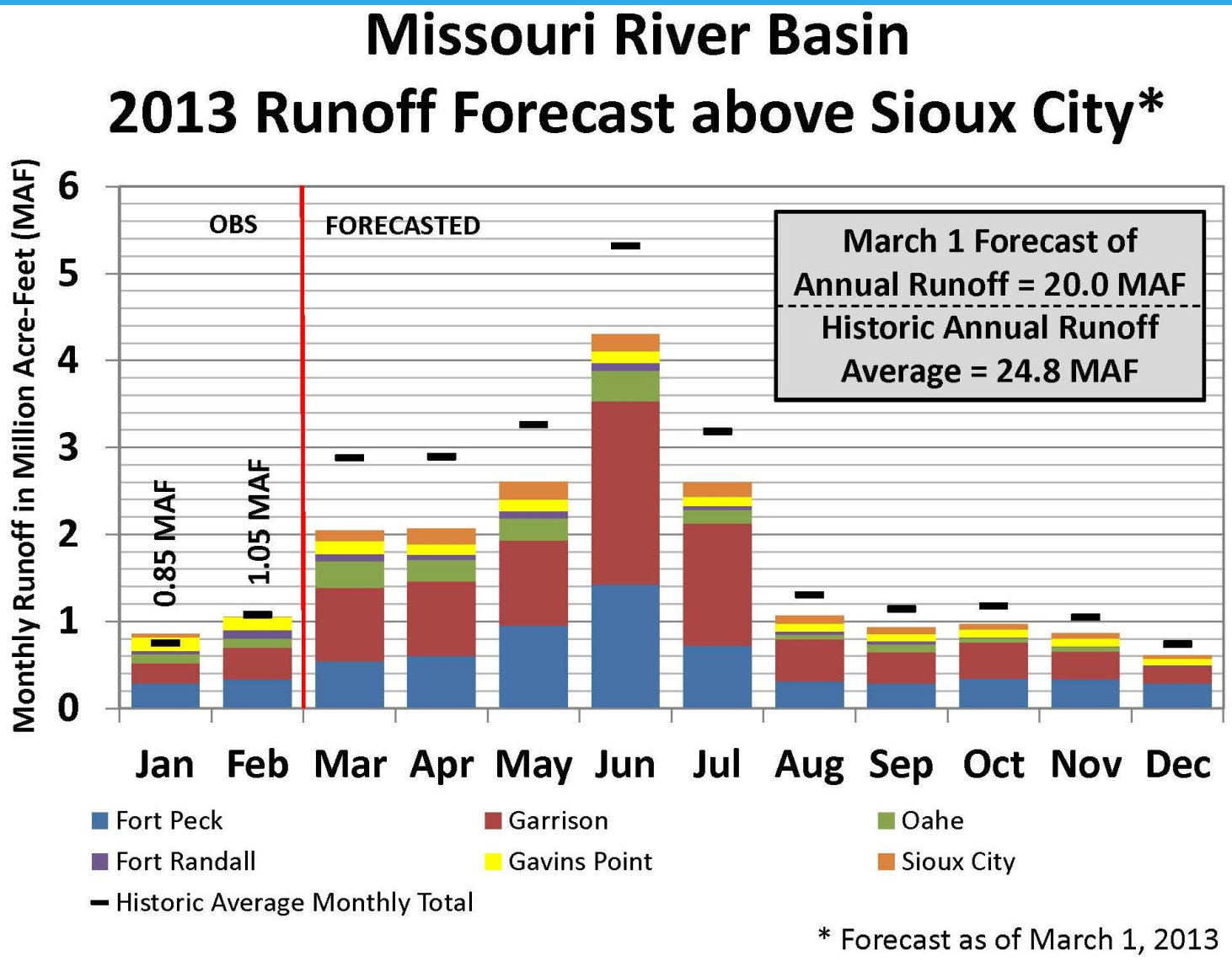


The Missouri River basin mountain snowpack normally peaks near April 15. By March 15, normally 87% of the peak has accumulated. On March 19, 2013 the mountain snowpack SWE in the "Total above Fort Peck" reach is currently 13.3", 92% of average. The mountain snowpack SWE in the "Total Fort Peck to Garrison" reach is currently 10.3", 84% of average.

*Generally considered the high and low year of the last 20-year period.

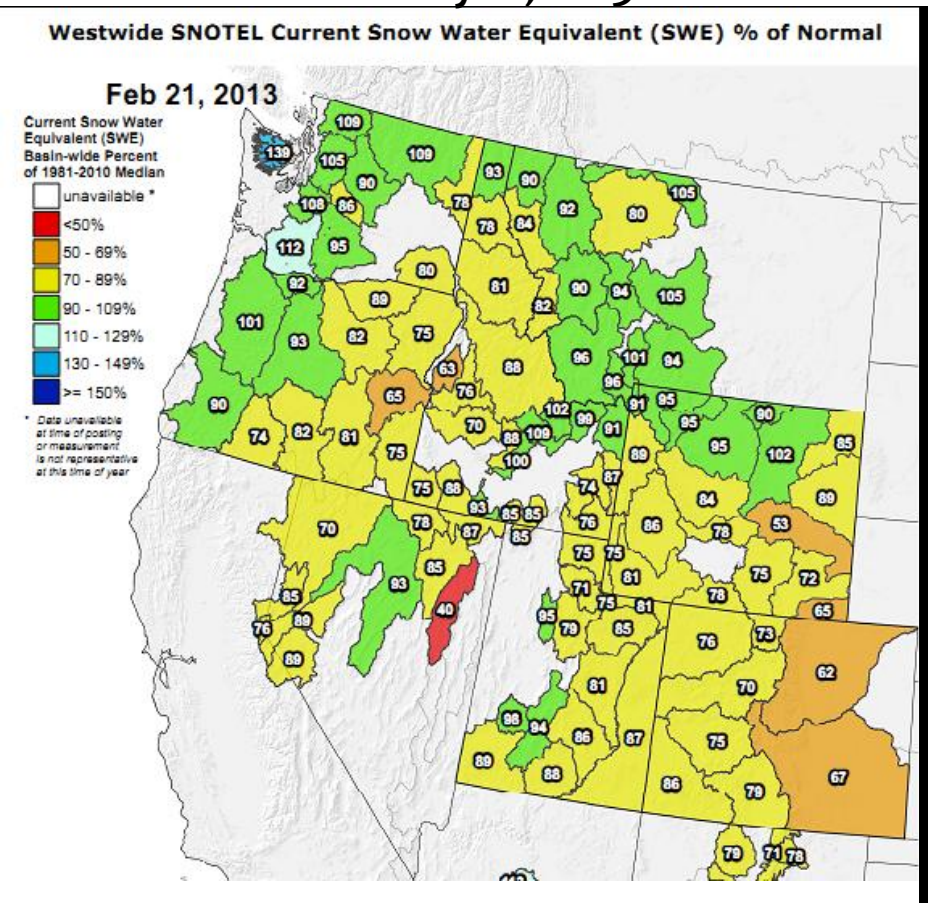
Provisional data. Subject to revision.

Missouri River Conditions

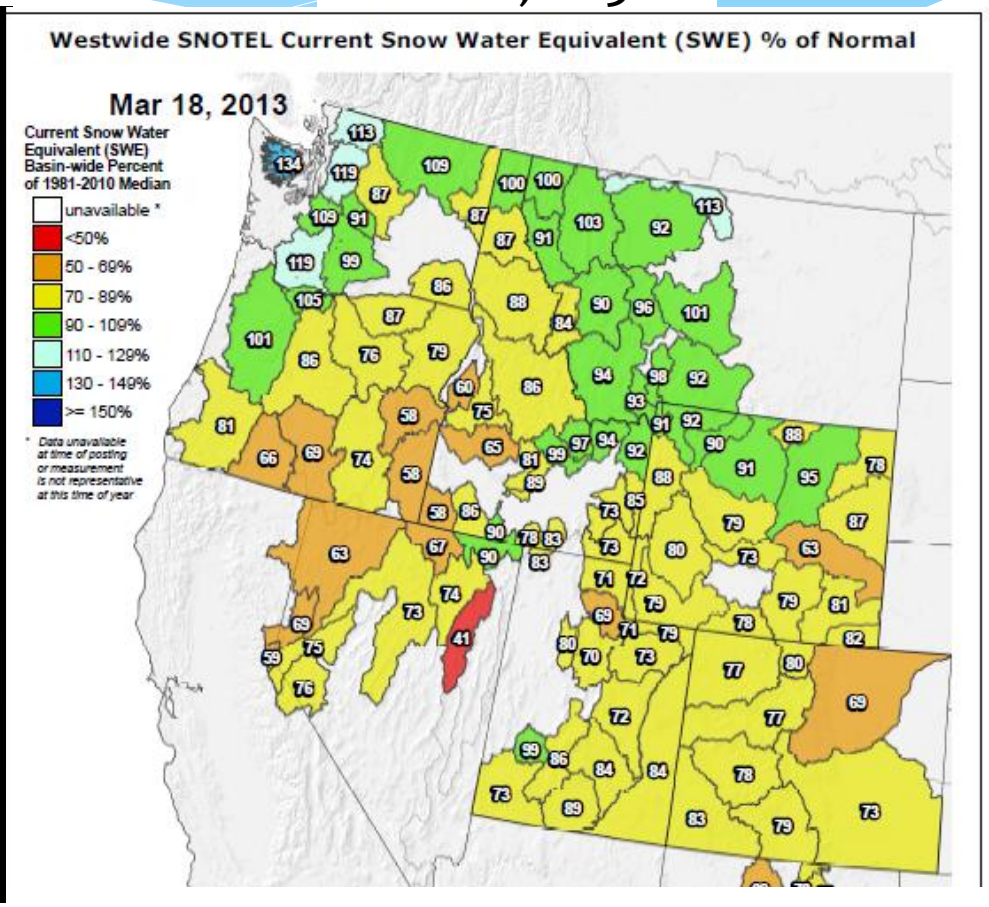


Snow Water Equivalent % of Normal

February 21, 2013



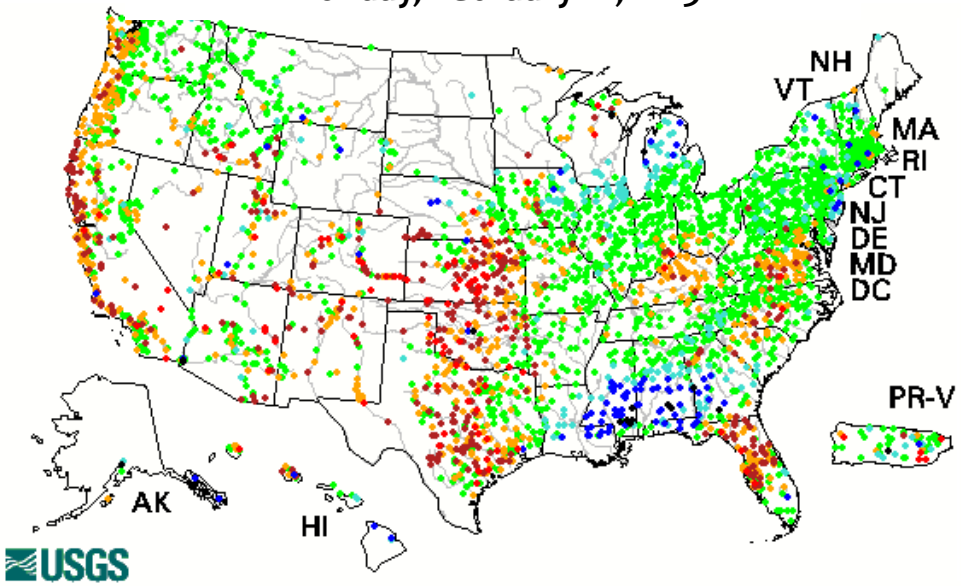
March 18, 2013



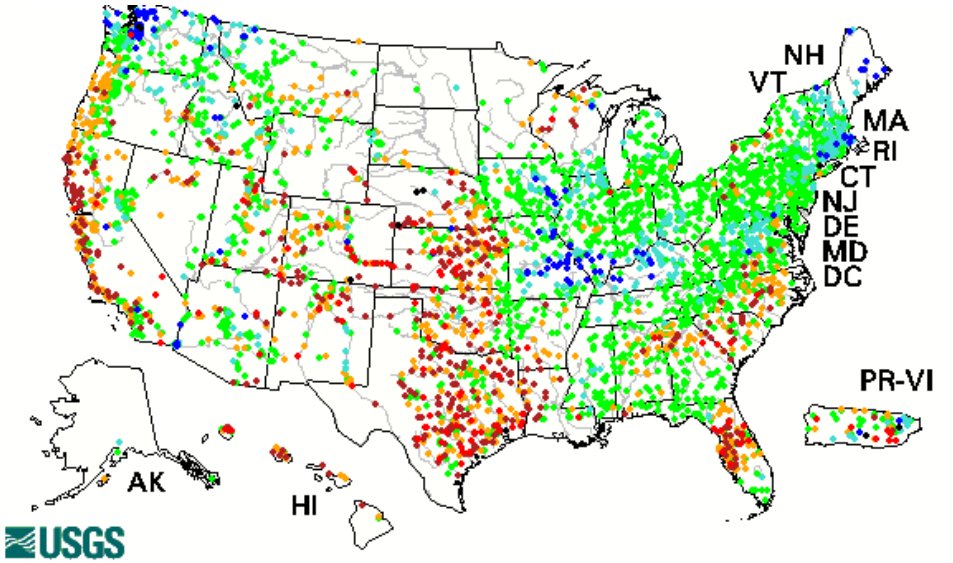
ftp://ftp.wcc.nrcs.usda.gov/data/water/wcs/gis/maps/west_swepctnormal_update.pdf /

7-Day Average Streamflow

Monday, February 18, 2013



Wednesday, March 20, 2013

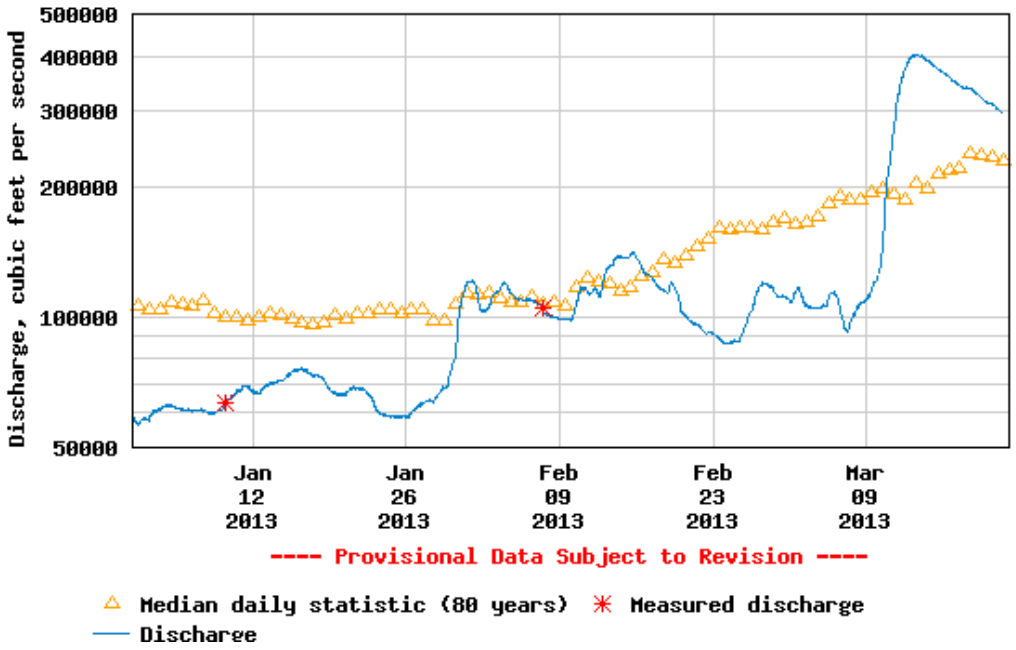


Explanation - Percentile classes						
Low	<10	10-24	25-75	76-90	>90	High
	Much below normal	Below normal	Normal	Above normal	Much above normal	

http://waterwatch.usgs.gov/?id=ww_current

Mississippi River Conditions

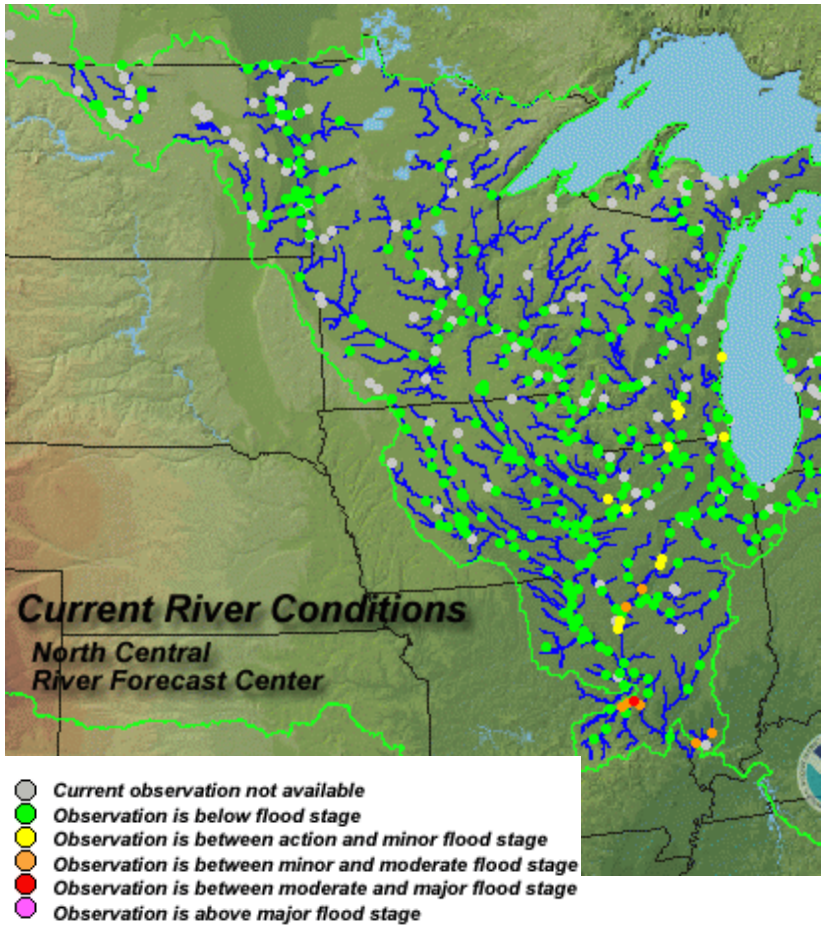
Discharge on the Mississippi River at St. Louis, MO
Jan 1, 2013- Mar 21, 2013



http://waterdata.usgs.gov/mo/nwis/uv?site_no=07010000

USGS

March 21, 2013 River Conditions

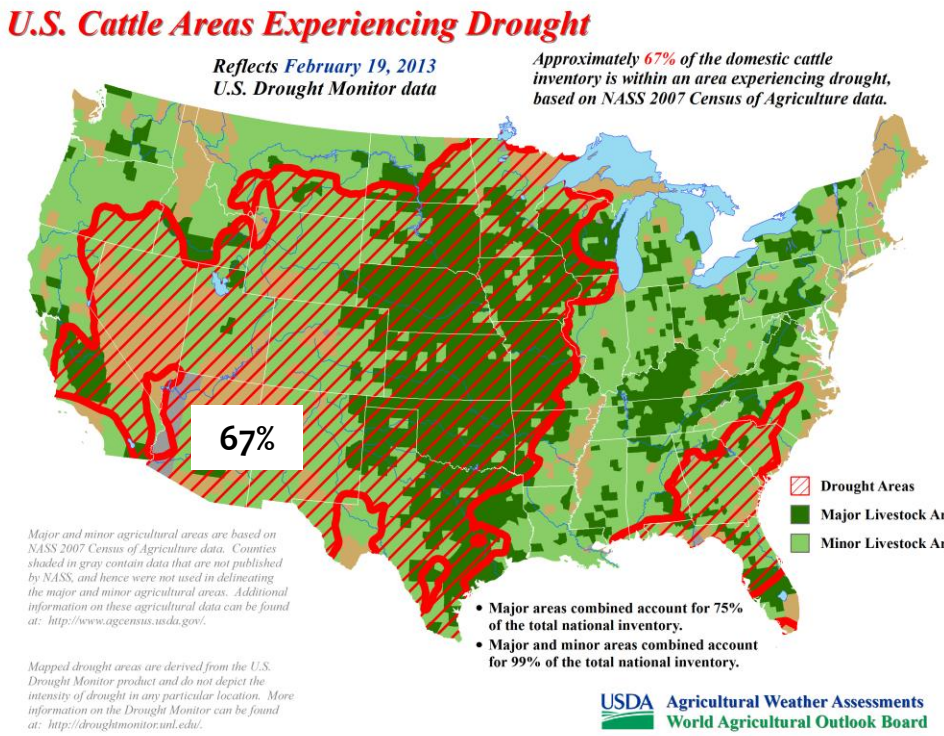


http://www.crh.noaa.gov/ncrfc/

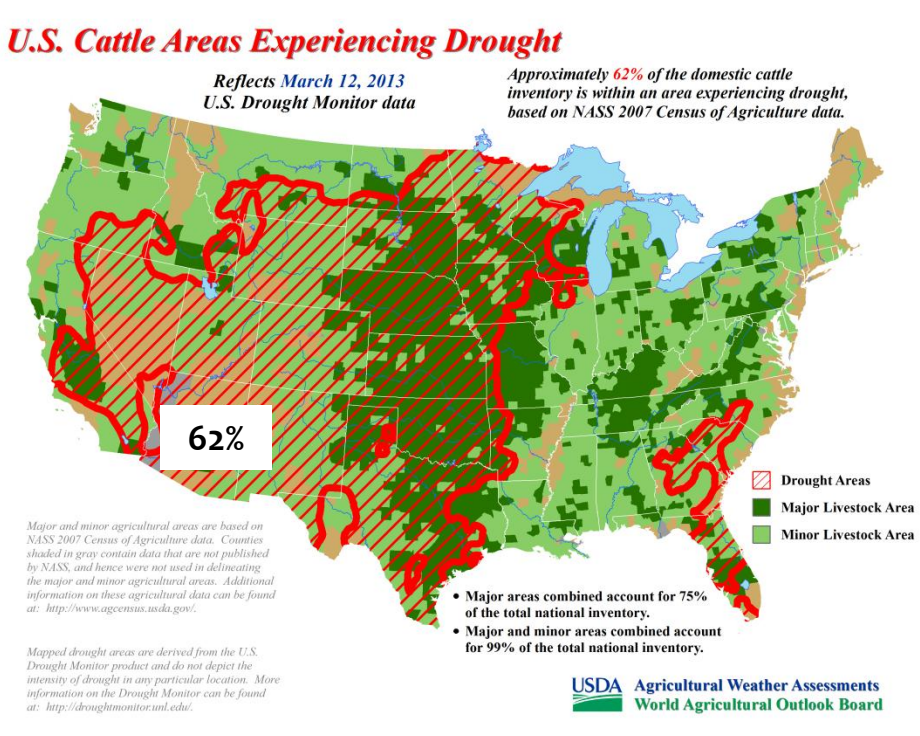
U.S. Cattle areas Experiencing Drought

Improvement in southeast U.S. and eastern edge of central U.S. drought

February 19, 2013



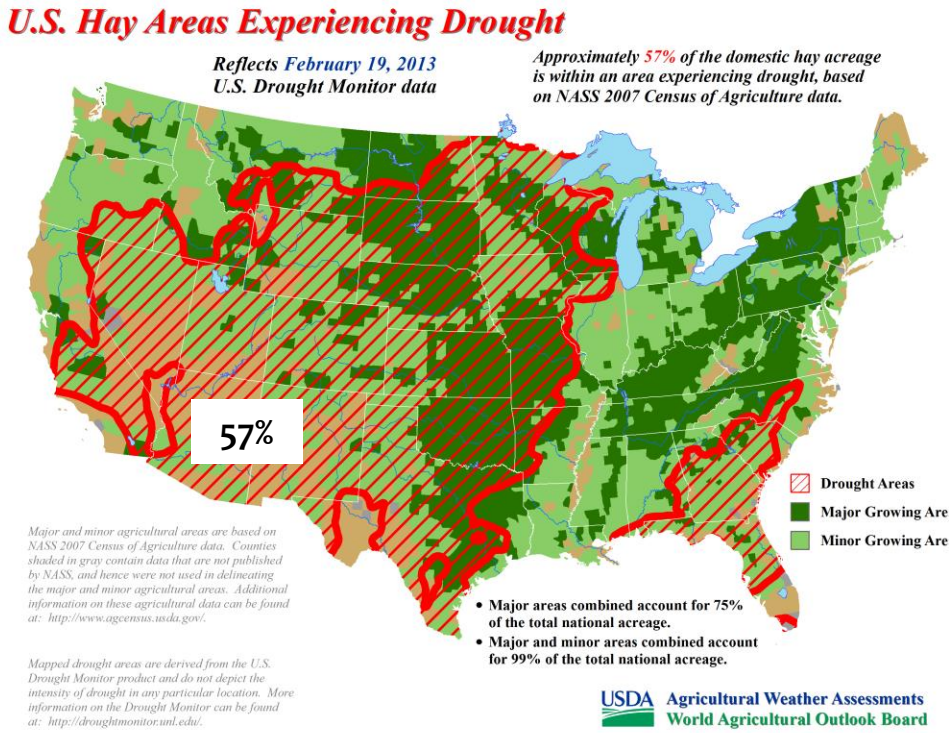
March 12, 2013



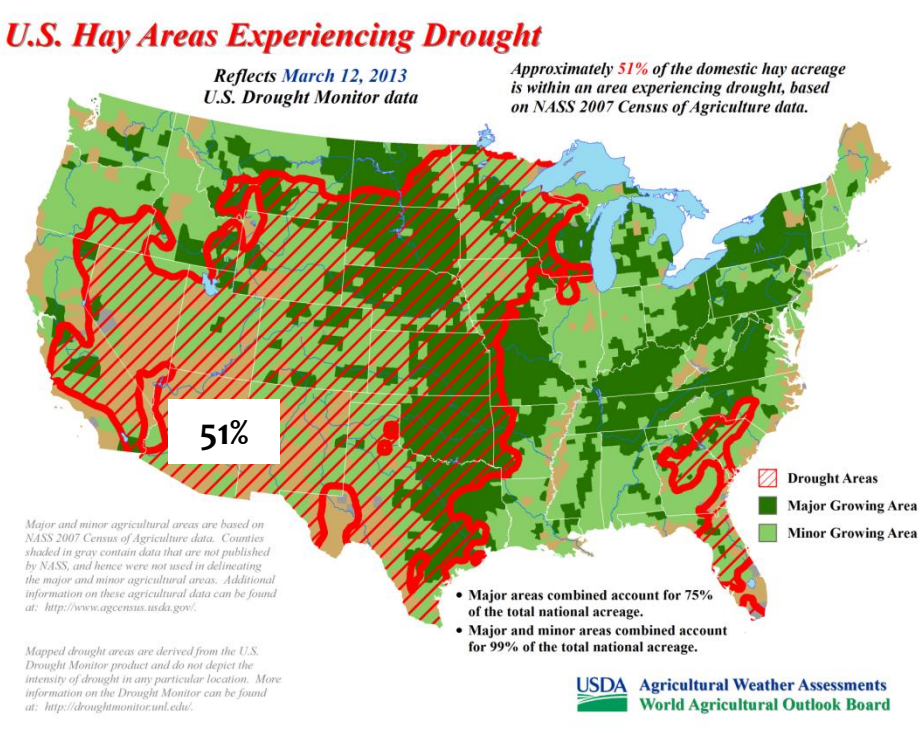
U.S. Hay areas Experiencing Drought

Improvement in southeast U.S. and eastern edge of central U.S. drought

February 19, 2013



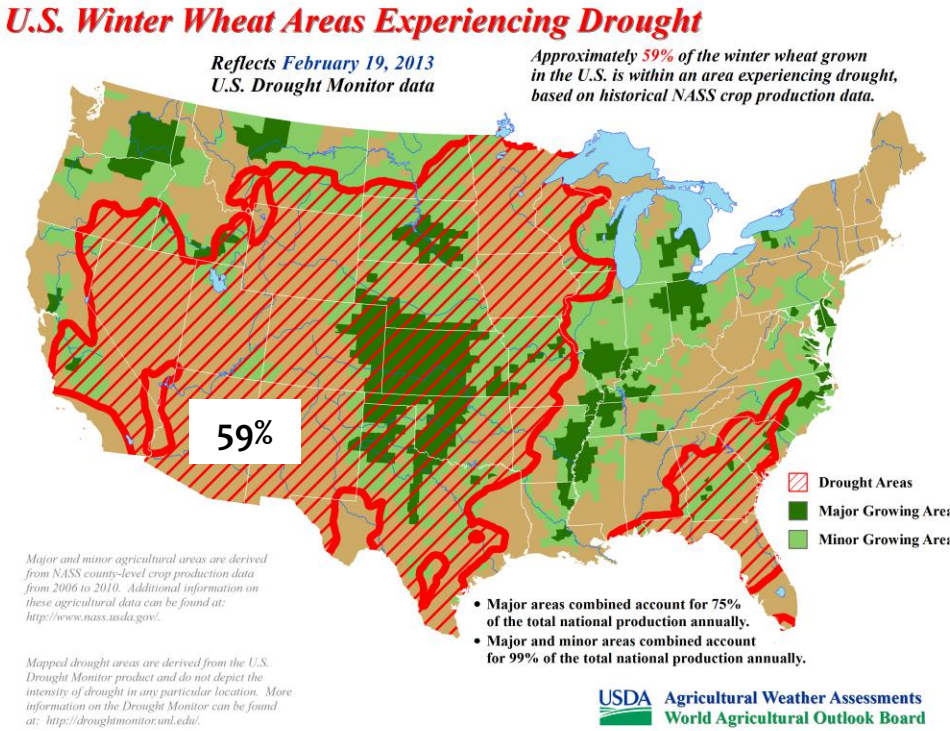
March 12, 2013



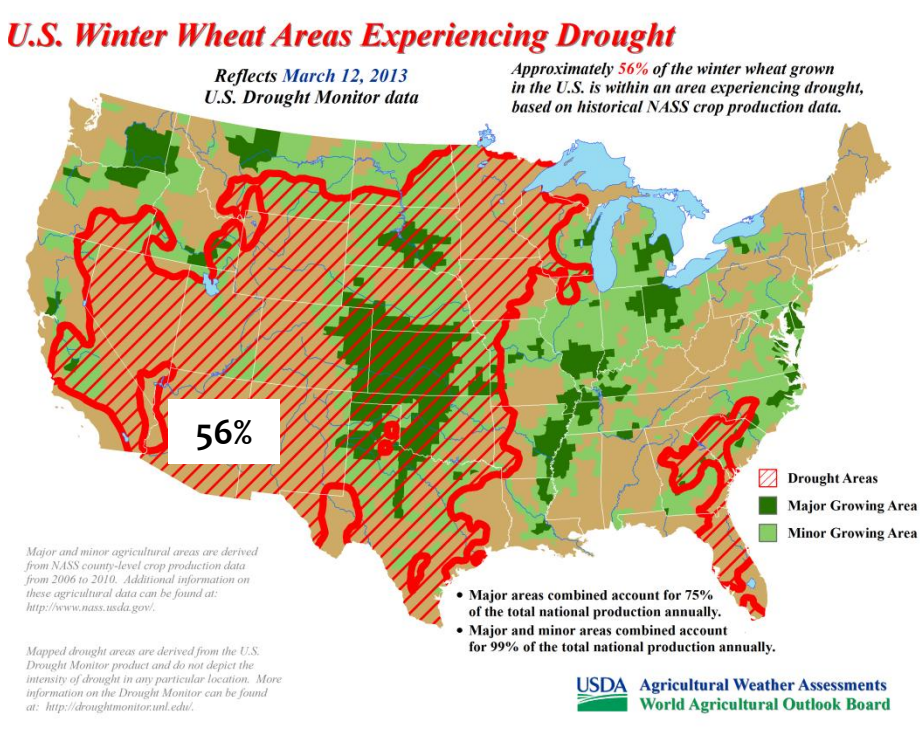
U.S. Wheat areas Experiencing Drought

Improvement in southeast U.S. and eastern edge of central U.S. drought

February 19, 2013



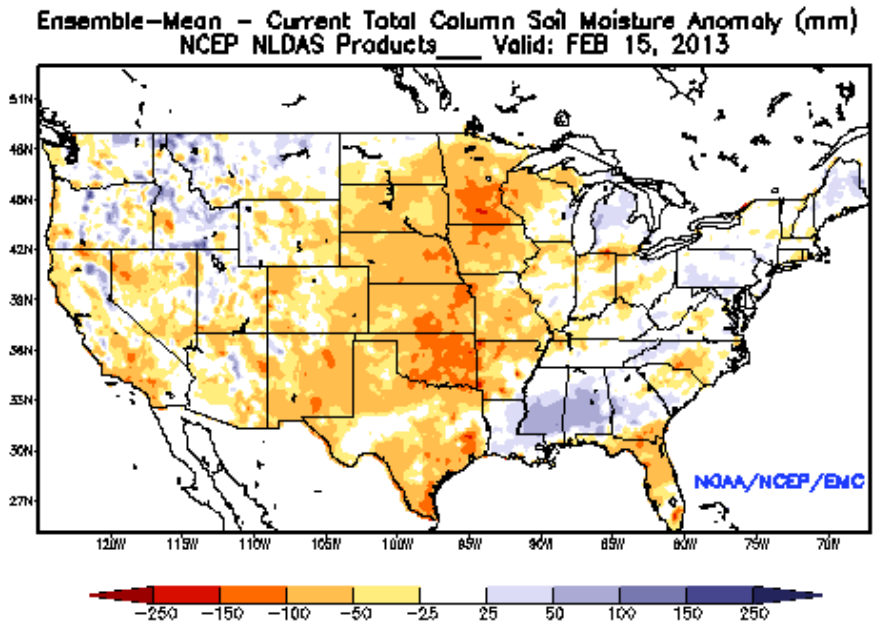
March 12, 2013



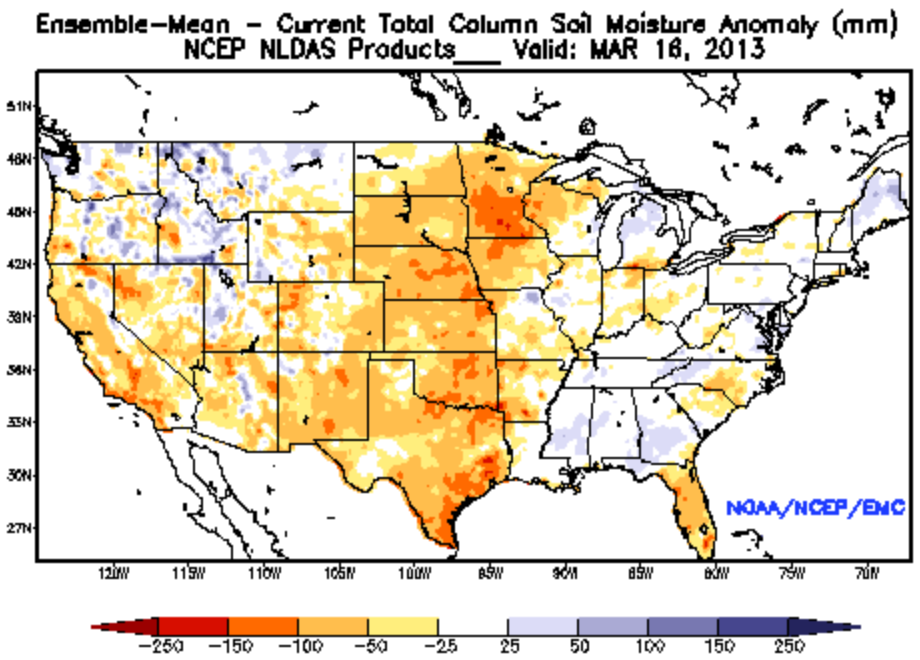
Soil Moisture and Recovery

Soil Moisture Anomaly in millimeters

February 15, 2013

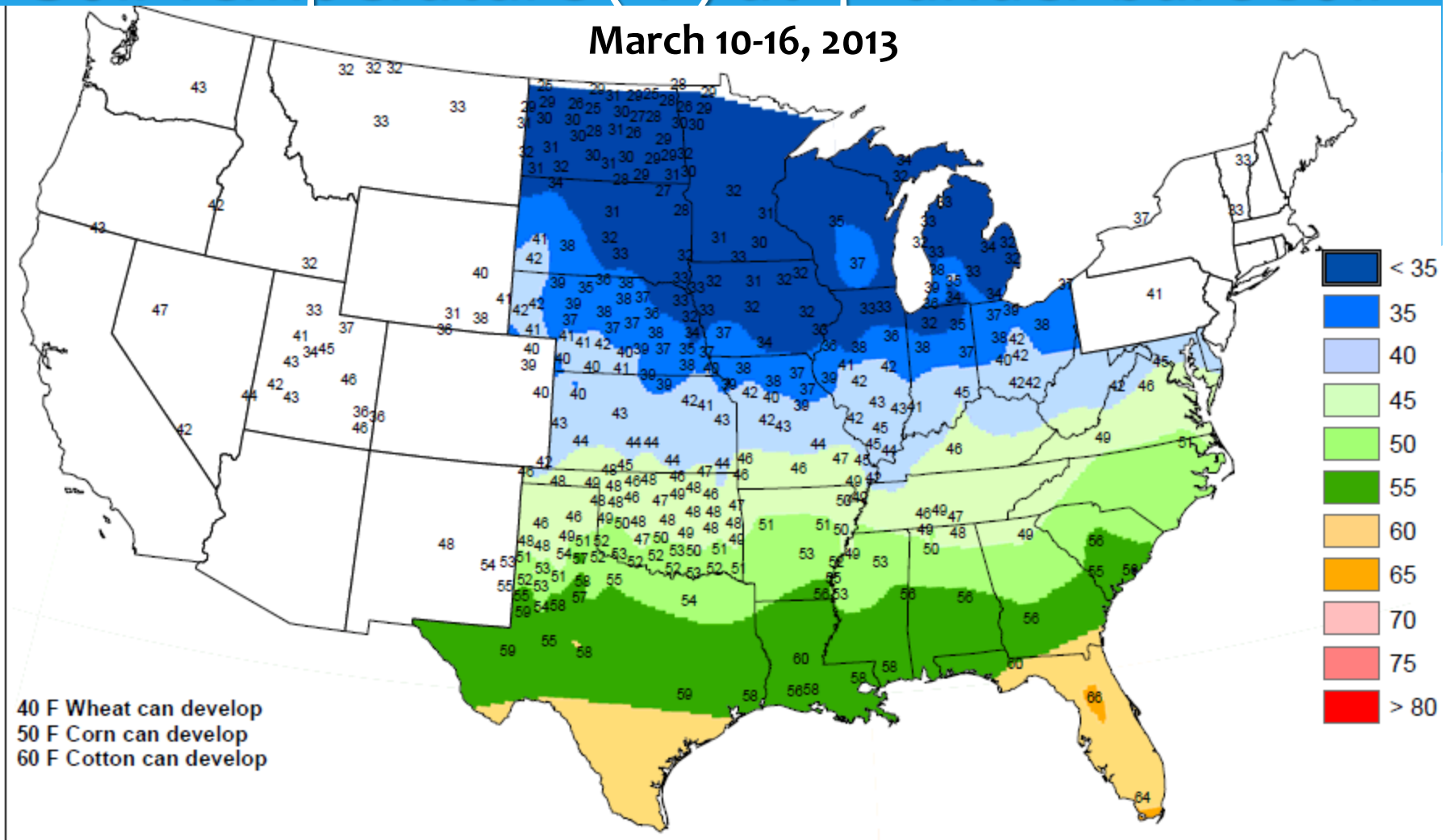


March 18, 2013



http://www.emc.ncep.noaa.gov/mmb/nldas/drought/

Soil Temperature (°F) at 4”under bare soil



Based on preliminary data

NOAA/USDA JOINT AGRICULTURAL WEATHER FACILITY

Supplemental data provided by Alabama A&M University, Bureau of Reclamation - Pacific Northwest Region AgriMet Program, High Plains Regional Climate Center, Illinois State Water Survey, Iowa State University, Louisiana Agriclimatic Information System, Mississippi State Univeristy, Oklahoma Mesonet, Purdue University, University of Missouri and USDA/NRCS Soil Climate Analysis Network.

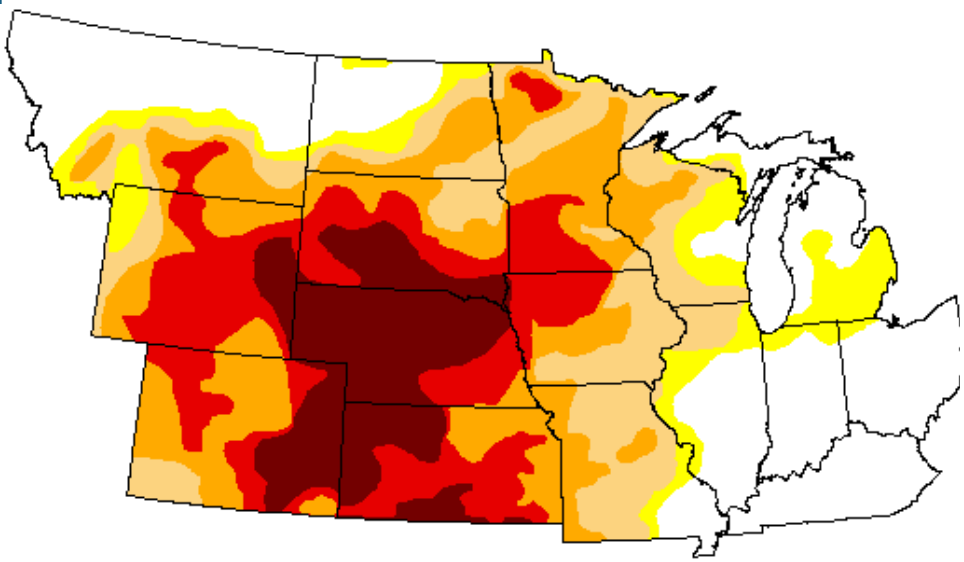
Weekly Weather and Crop Bulletin, Vol. 100, No. 12

http://www.usda.gov/oce/weather/pubs/Weekly/Wwcb/wwcb.pdf

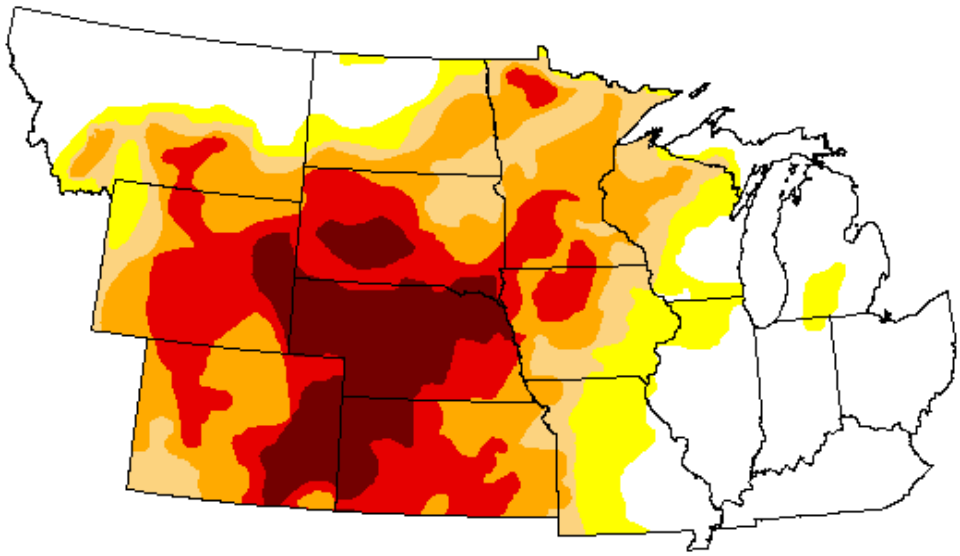
NOAA/USDA/JAWF

U.S. Drought Monitor Central Region

February 19, 2013



March 19, 2013



Intensity:

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

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

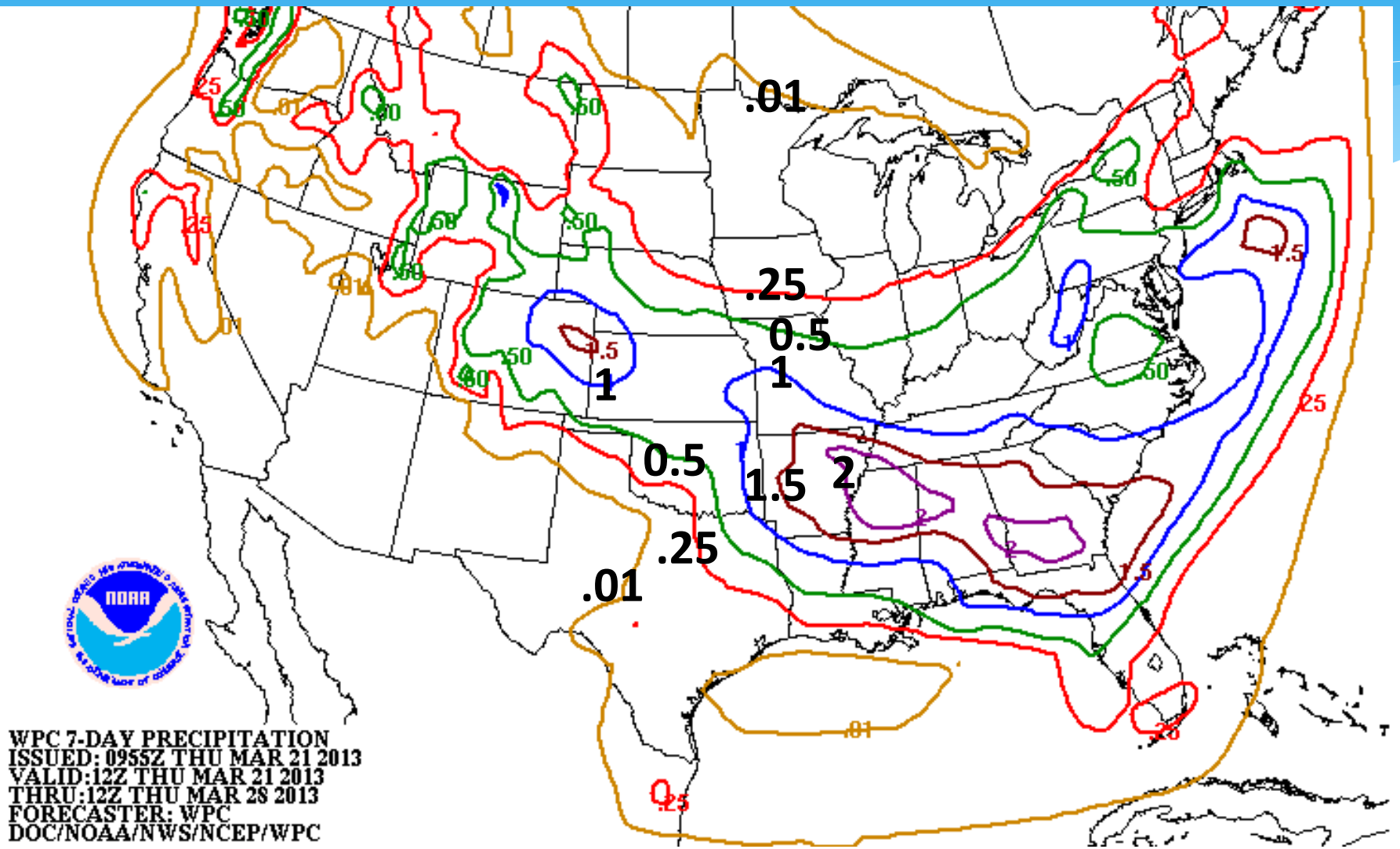
http://droughtmonitor.unl.edu

Released Thursday, March 3, 2013
Matthew Rosencrans, NOAA/NWS/NCEP/Climate Prediction Center

Climate Outlooks

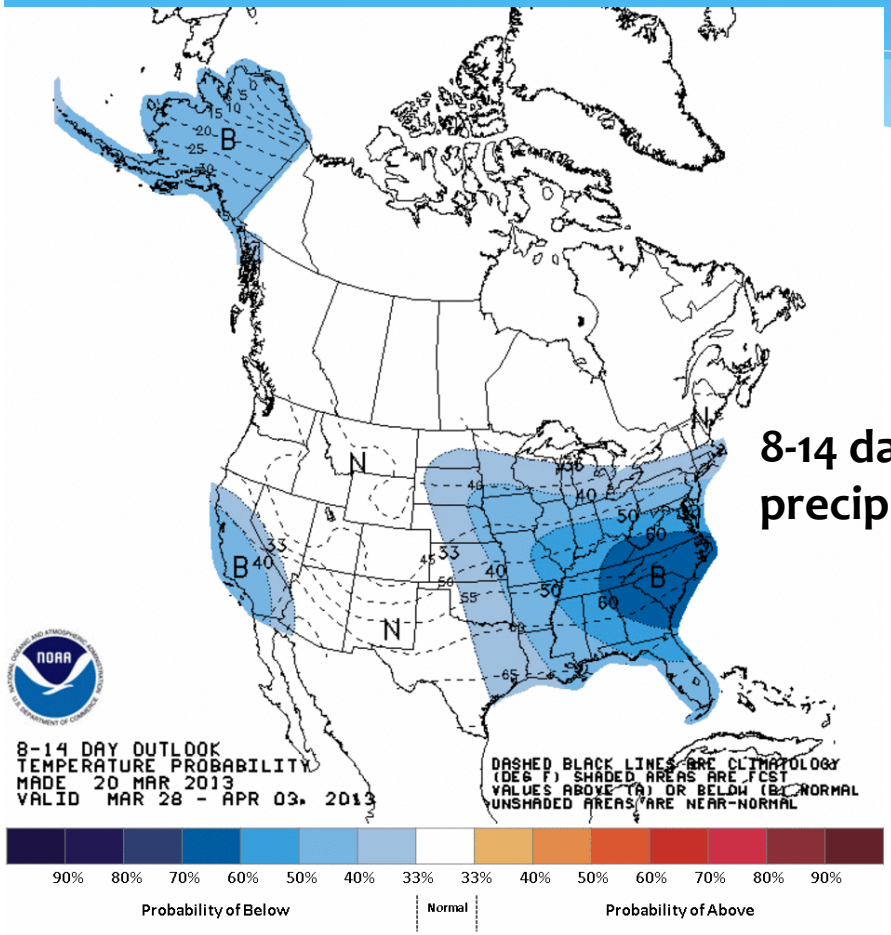
* 7-day precipitation forecast
* 8-14 day outlook
* April
* 3 Months (April, May, June)
* Seasonal Drought and Seasonal Flood Outlooks

7-day Quantitative Precipitation Forecast
Valid: 12z Thu Mar 21 – 12z Thu Mar 28

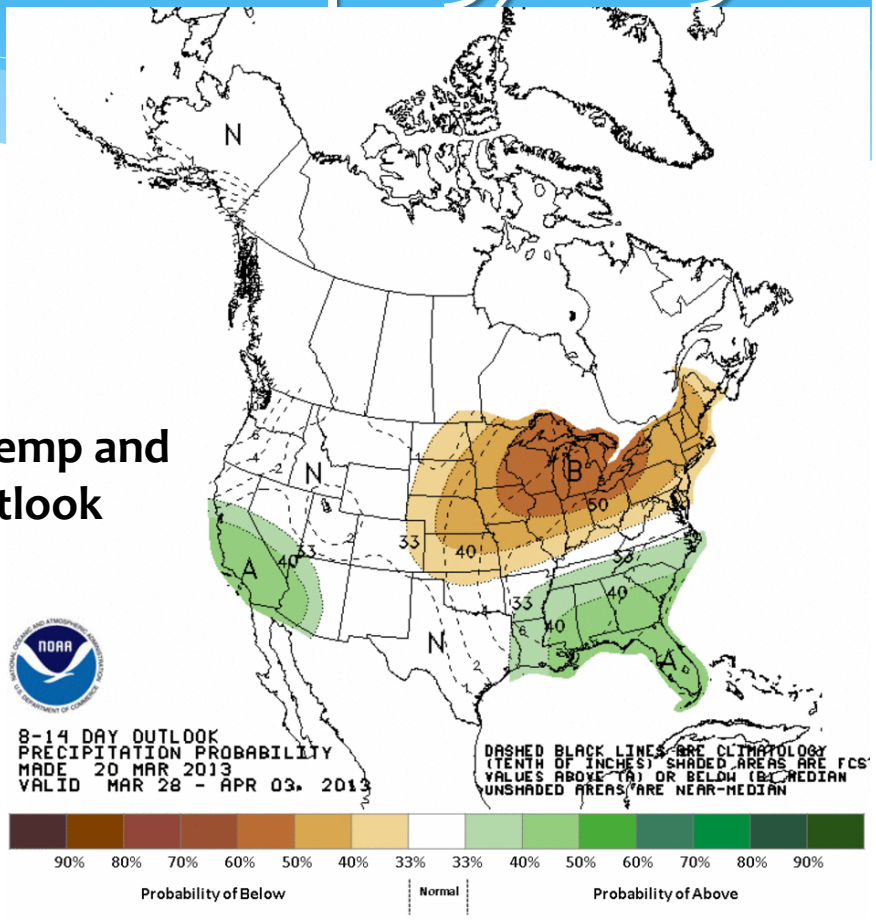


http://www.wpc.ncep.noaa.gov/qpf/day1-7.shtml

Temperature and Precipitation Probabilities for Mar 28-Apr 3, 2013



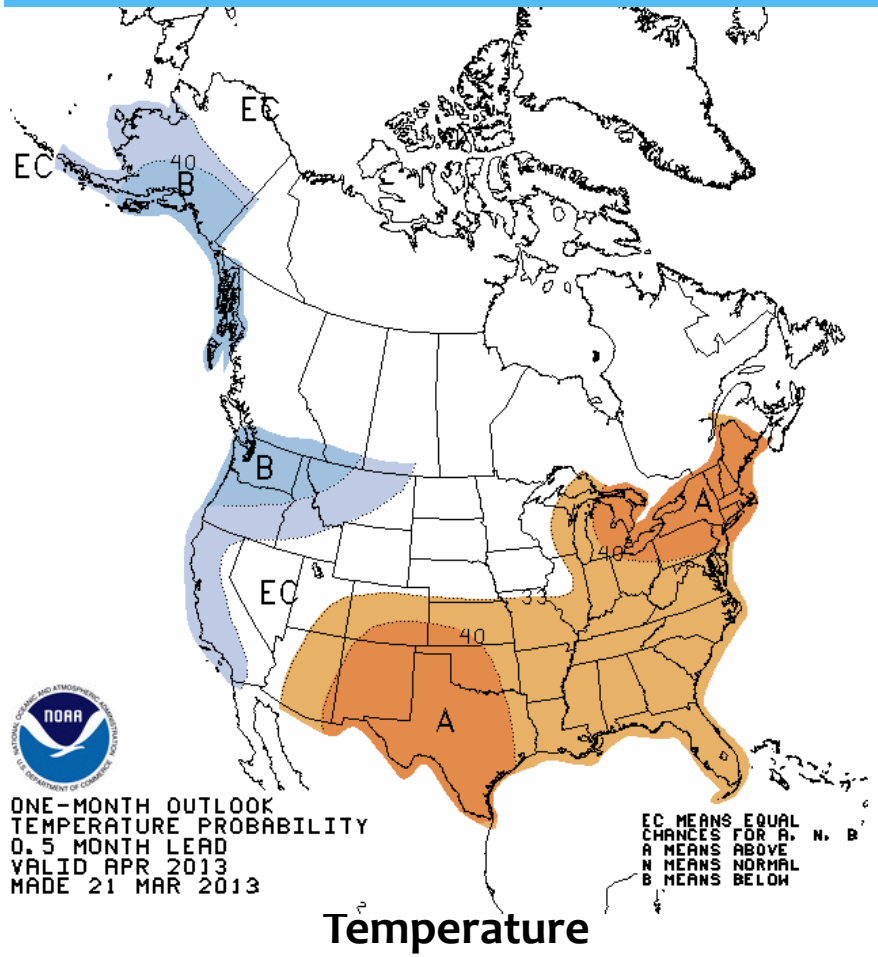
8-14 day temp and precip outlook



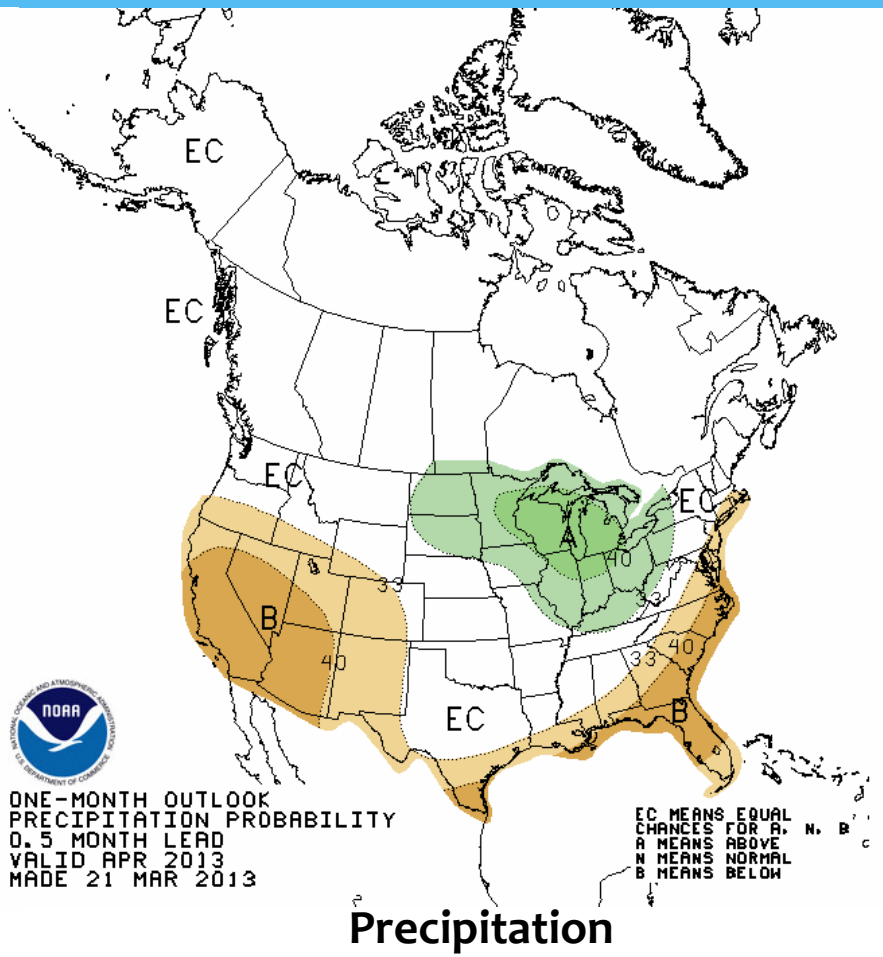
Temperature **Precipitation**

http://www.cpc.ncep.noaa.gov/products/predictions/814day/index.php

April Temperature and Precipitation Probabilities



Temperature

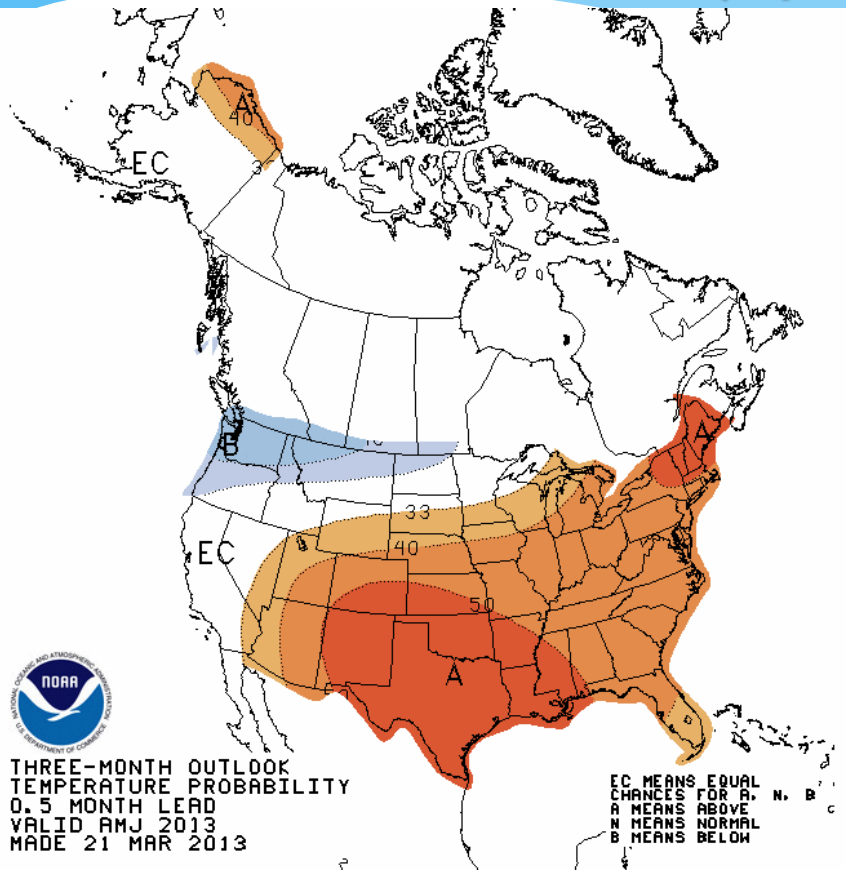


Precipitation

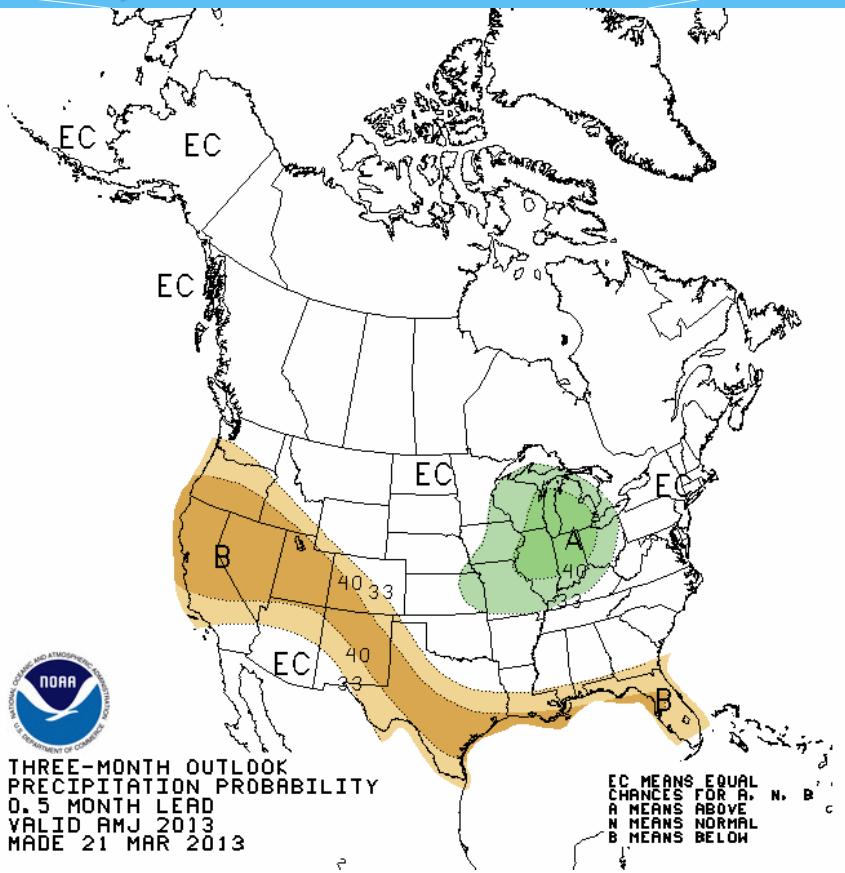
http://www.cpc.ncep.noaa.gov/products/predictions/30day/

3 Month Temperature and Precipitation Probabilities

(April-June)



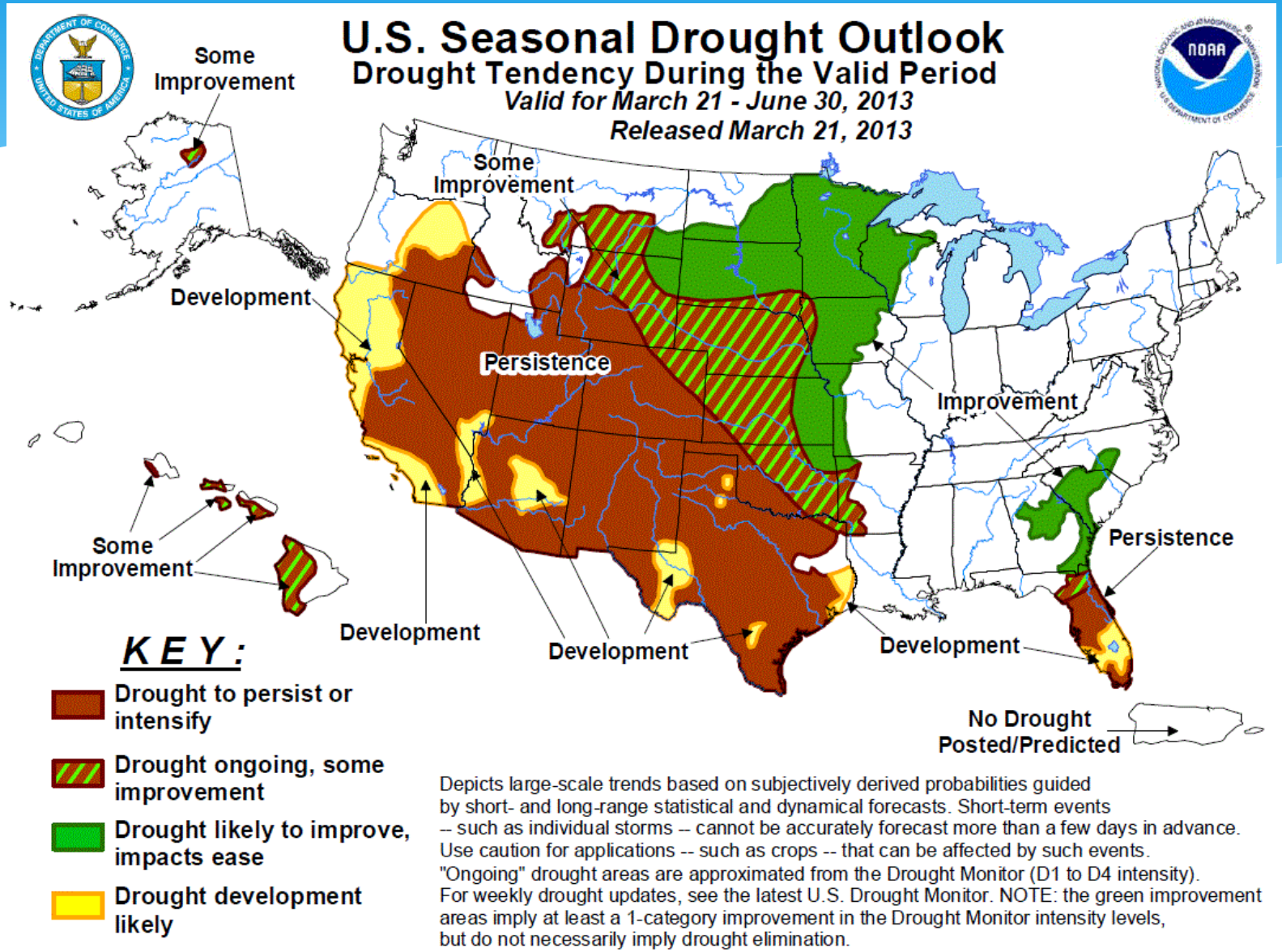
Temperature



Precipitation

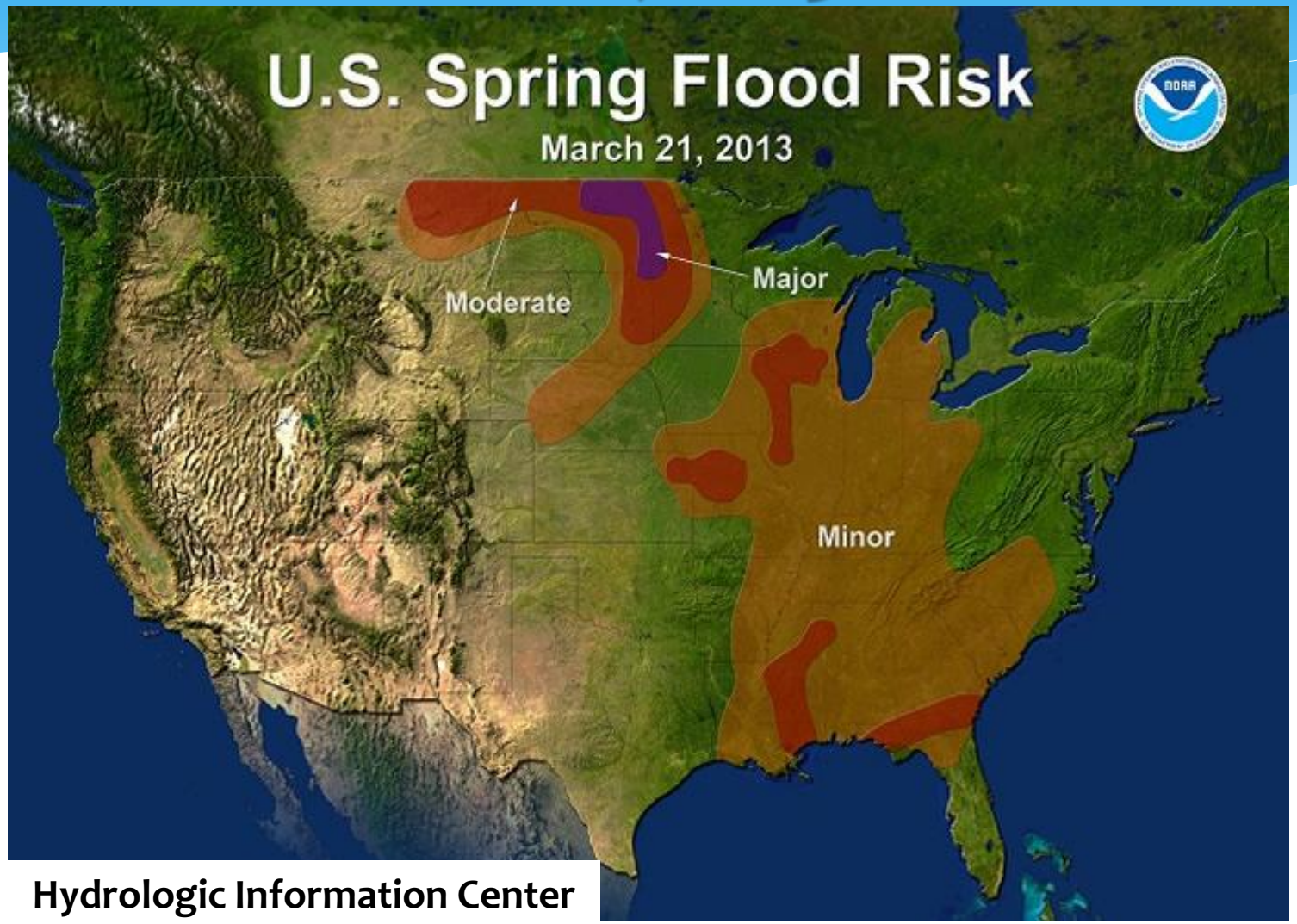
http://www.cpc.ncep.noaa.gov/products/predictions/long_range/seasonal.php?lead=1

Drought Outlook through Jun 30th



http://www.cpc.ncep.noaa.gov/products/expert_assessment/season_drought.gif/

U.S. Spring Flood Outlook
Mar 21, 2013



Hydrologic Information Center

http://www.nws.noaa.gov/hic/nho/ /

Summary

* **Recent Conditions**
  * Over the past few weeks, below normal temperatures have dominated much of the Central Region. Only parts of Montana, W South Dakota and SW Wyoming have experienced marginally warmer than normal conditions.
  * Since mid-February, precipitation has generally averaged above normal across the eastern half of the Central Region and near to below normal across the western half.
  * Drought conditions have improved most notably across southern WI, northern IL , southeastern IA and most of MO.
  * Extreme to Exceptional drought still impacting much of the Plains, from SD to TX.
  * Improved flow conditions along the Mississippi River, but little to no improvement in the upper Missouri River Basin.

Summary

* **Outlooks**
  * ENSO neutral conditions are forecast through Fall 2013
  * For the Central Region, drought conditions are expected to persist in southwestern WY, much of CO and extreme southwestern KS. Some improvements are expected for southern MT, northeastern half of WY, far northeastern CO, central and northern Plains and Upper Midwest over the next few months.
  * Spring flood potential exist along the Red River Basin, Lower Missouri River Basin, Mississippi River Basin and Ohio River Basin.

Further Information - Partners

- **Today's and Past Recorded Presentations and :**
- *http://mrcc.isws.illinois.edu/webinars.htm*
  http://www.hprcc.unl.edu
- NOAA's National Climatic Data Center: www.ncdc.noaa.gov
  - Monthly climate reports (U.S. & Global): www.ncdc.noaa.gov/sotc/
- NOAA's Climate Prediction Center: www.cpc.ncep.noaa.gov
- Climate Portal: www.climate.gov
- U.S. Drought Portal: www.drought.gov
- National Drought Mitigation Center: http://drought.unl.edu/
- State climatologists
  - http://www.stateclimate.org
- Regional climate centers
  - http://mrcc.isws.illinois.edu
  - http://www.hprcc.unl.edu

Thank You and Questions?

* Questions:
  * **Climate:**
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  * John Eise: john.eise@noaa.gov, 816-268-3144
  * Mike Timlin: mtimlin@illinois.edu; 217-333-8506
  * Natalie Umphlett: numphlett2@unl.edu ; 402 472-6764
  * Brian Fuchs: bfuchs2@unl.edu 402 472-6775

  * **Weather:**
  * crhroc@noaa.gov