Great Plains and Midwest Drought Impacts and Outlook May 16, 2013

Dr. Martha Shulski
Director, High Plains Regional Climate Center
University of Nebraska - Lincoln
mshulski3@unl.edu
402-472-6711

May snow in Lincoln
Natalie Umphlett

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:
    * State Climatologists
    * Doug Kluck & John Eise (NOAA)
    * American Association of State Climatologists
    * Midwestern and High Plains Regional Climate Centers
    * National Drought Mitigation Center/USDA

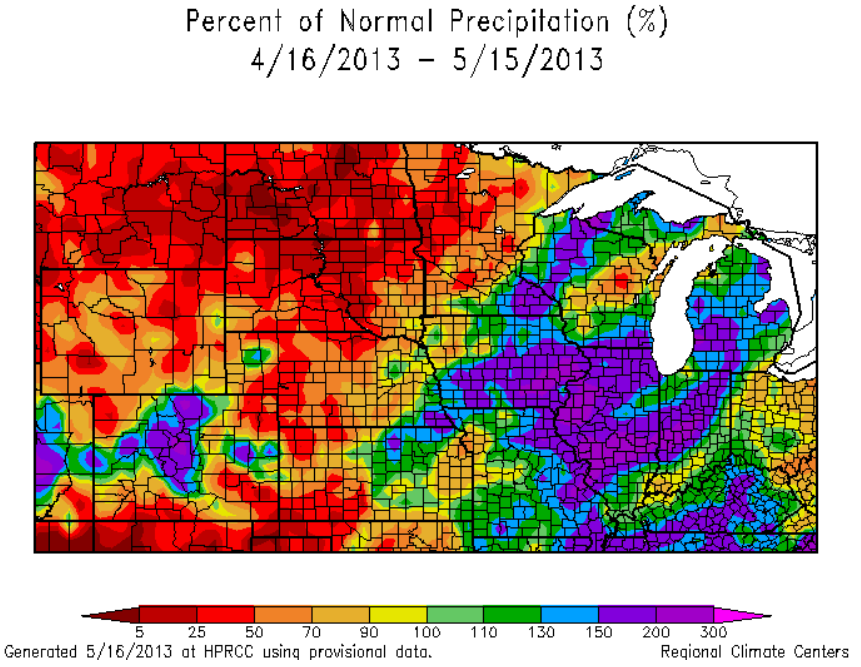
* **Next Climate/Drought Outlook Webinar**
  * June 20, 2013 (1 PM CDT) and monthly thereafter

* **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**

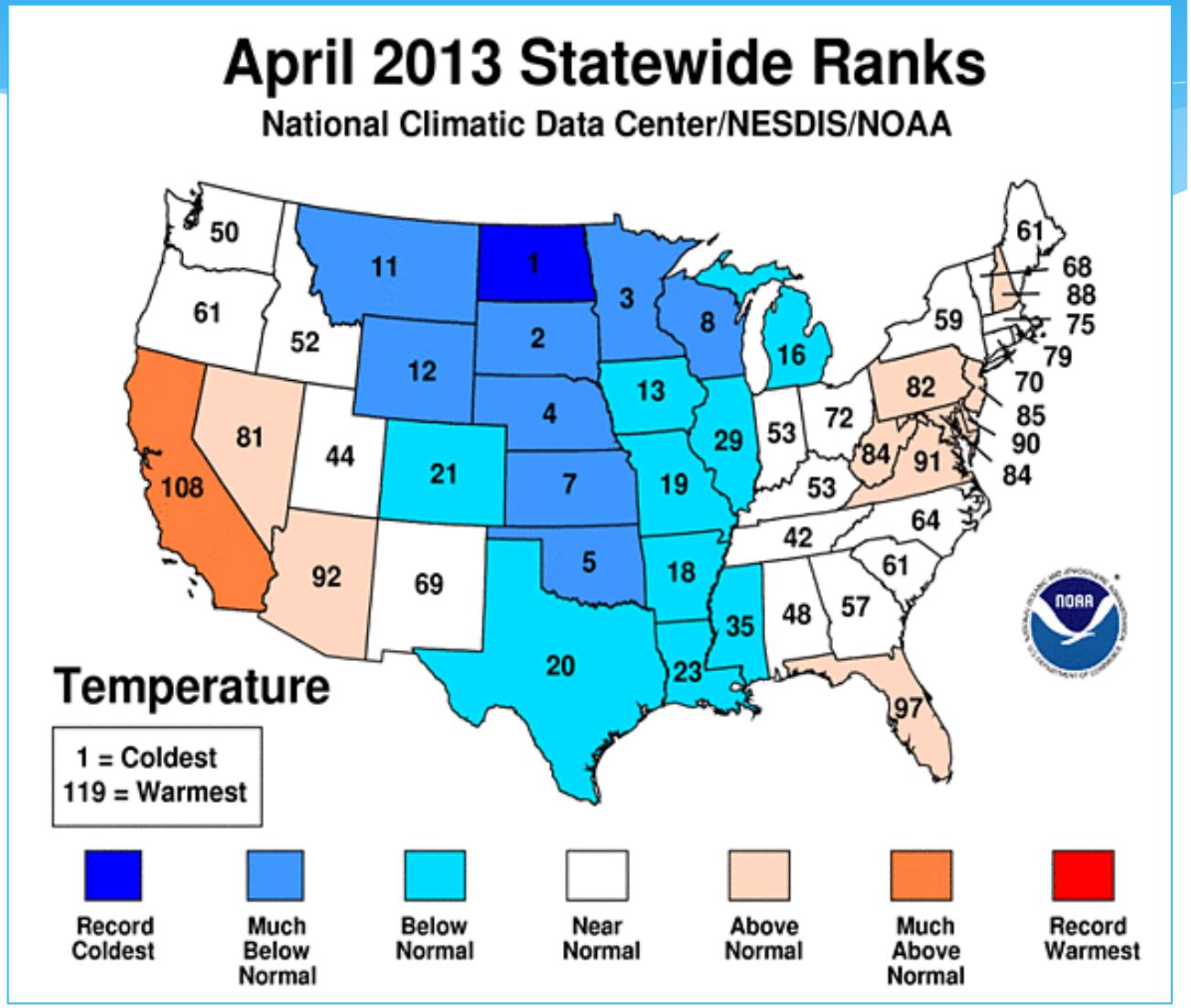
Agenda:
A tale of two regions

* **Current conditions**
* **Interesting extremes: cold, snow, rain**
* **Drought update and impacts**
* **Outlooks**
* **Questions/Comments**



April Temperatures

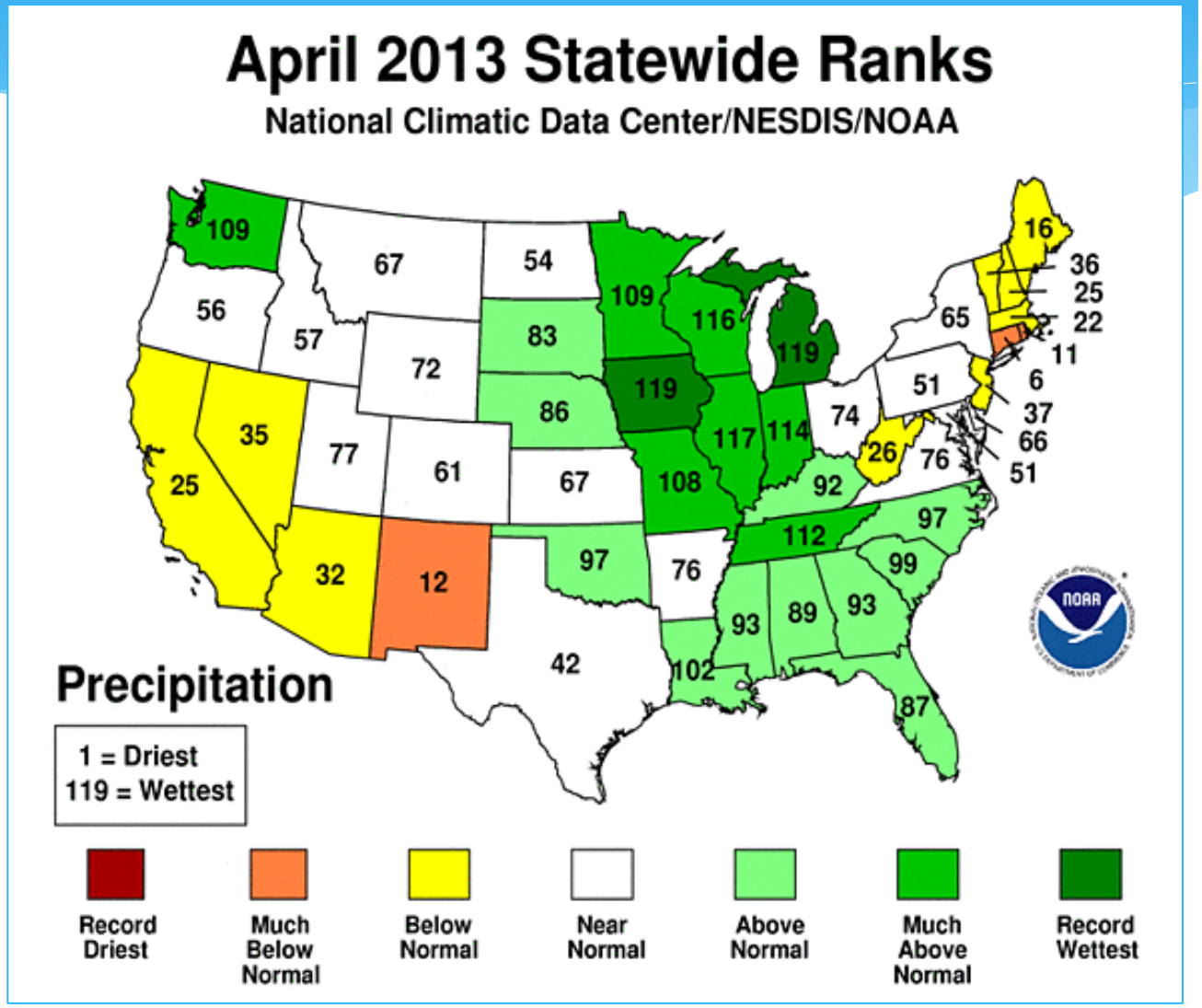
- **Top 10 coldest April on record for 6 states in the region.**
- **North Dakota was nearly 10°F below average at 31°F.**



http://www.ncdc.noaa.gov/temp-and-precip/maps.php

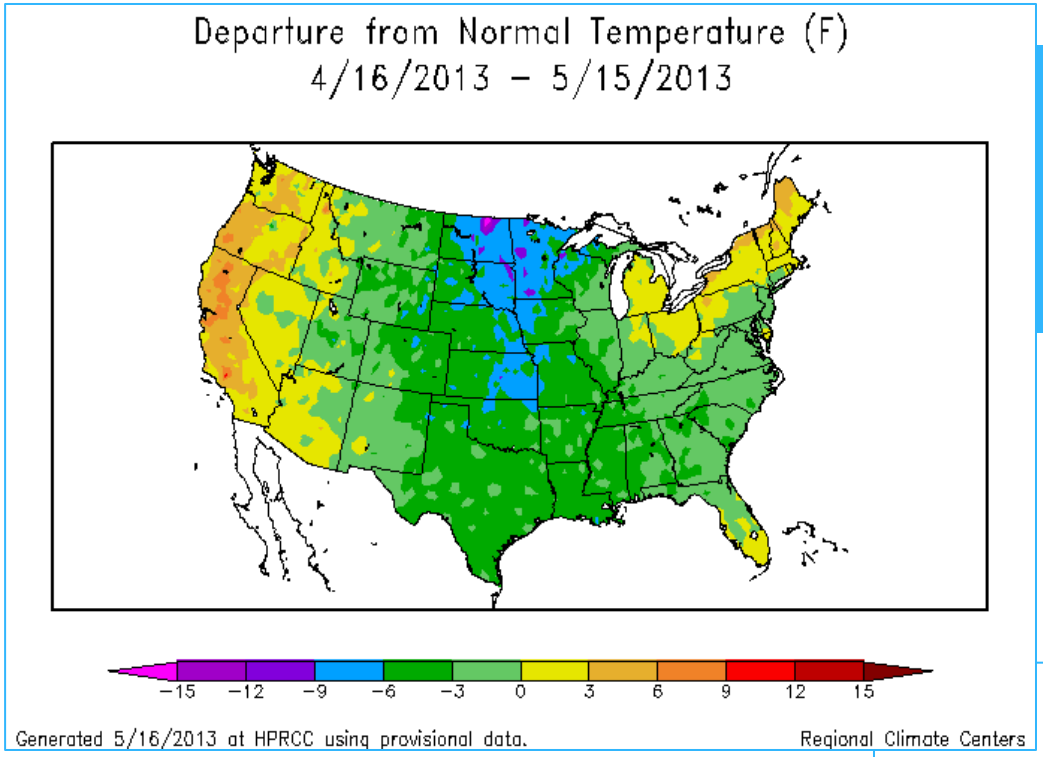
April Precipitation

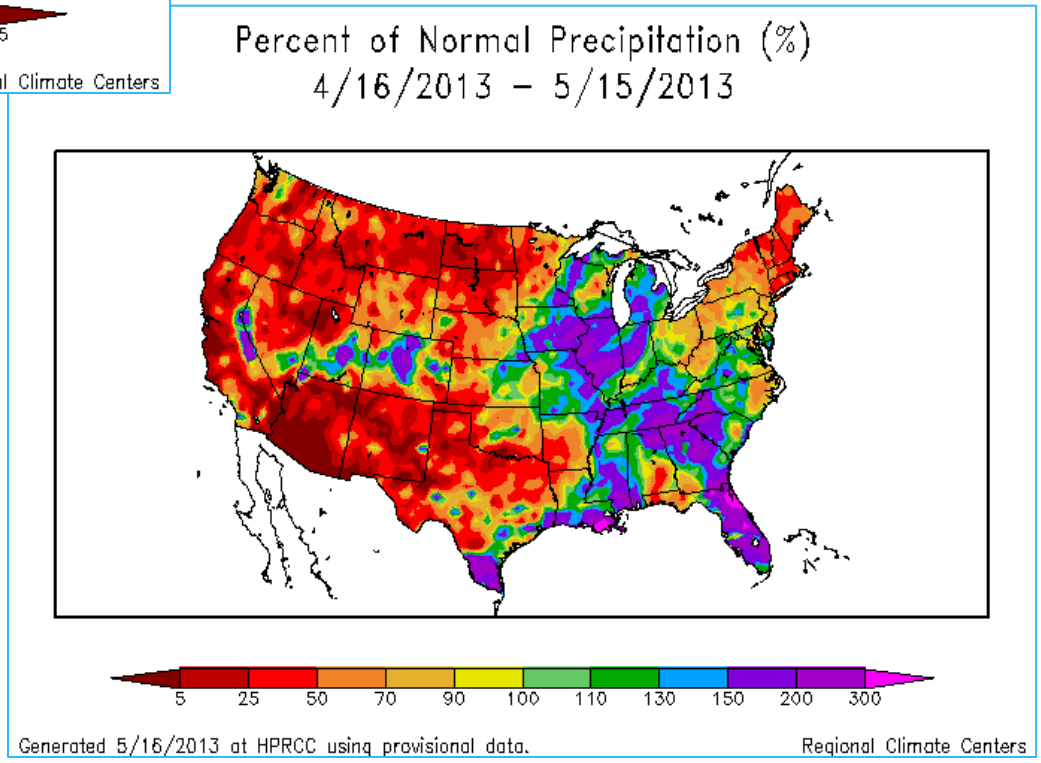
- Top 10 wettest April on record for 5 states in the region.
- IA, 6.71in (227%) MI, 5.97in (223%) set new records for wetness.



http://www.ncdc.noaa.gov/temp-and-precip/maps.php

Most recent 30-day departures

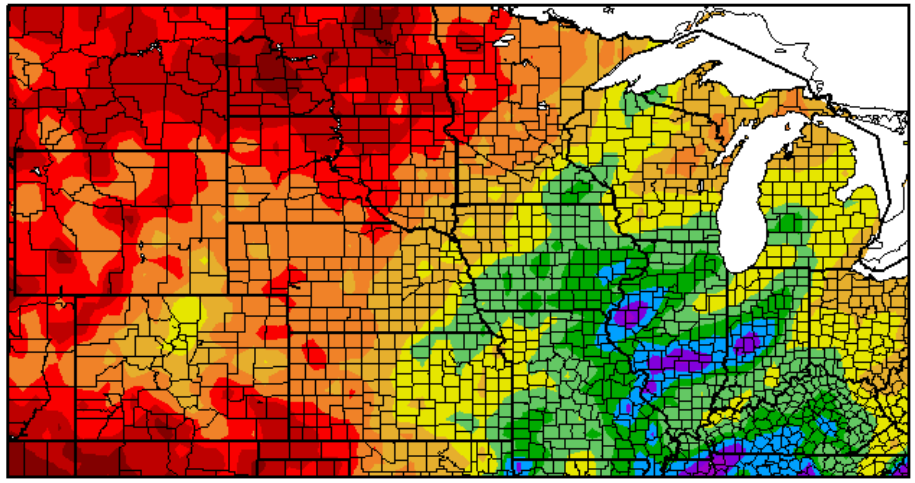




http://www.hprcc.unl.edu/maps/current/

30-day precipitation

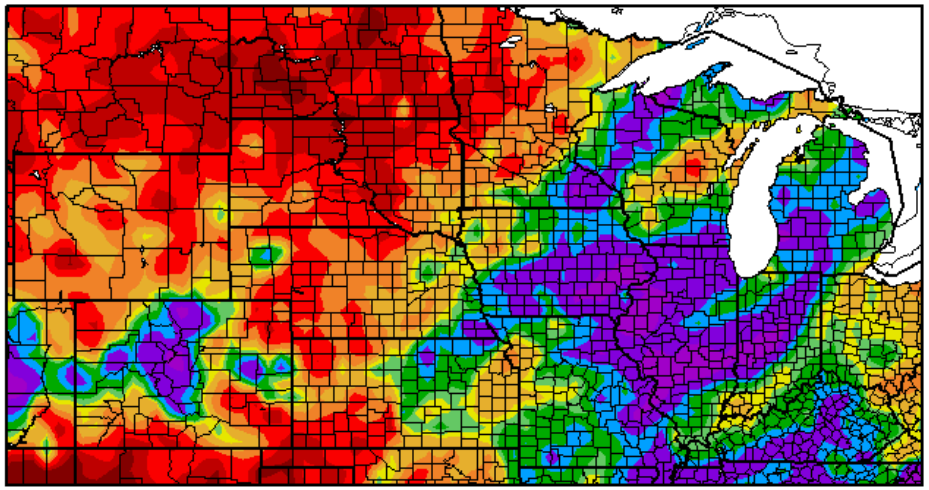
Precipitation (in)
4/16/2013 – 5/15/2013



0.1 0.5 1 2 3.5 5 6.5 8 9.5 11 12.5

Generated 5/16/2013 at HPRCC using provisional data. Regional Climate Centers

Percent of Normal Precipitation (%)
4/16/2013 – 5/15/2013

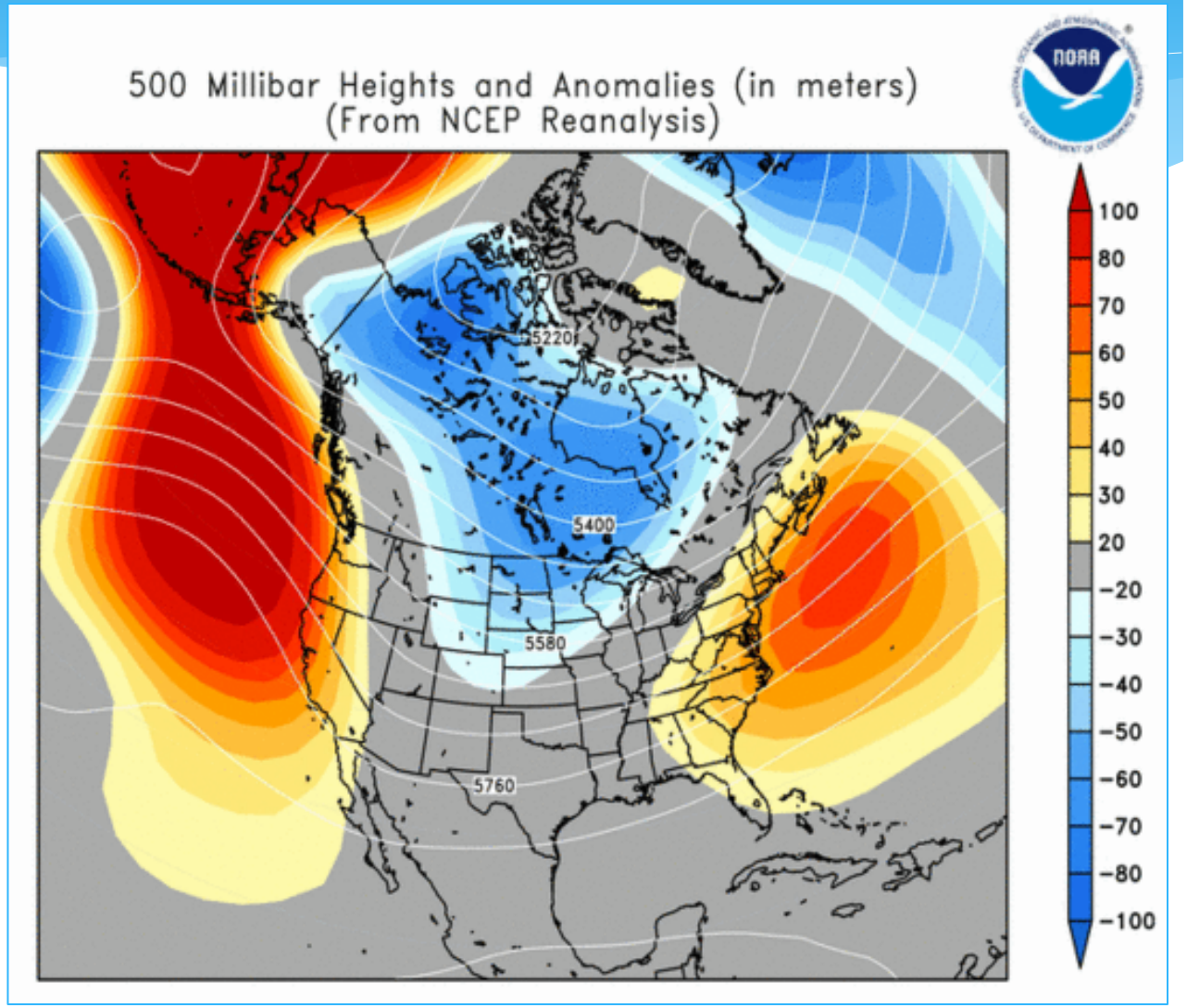


5 25 50 70 90 100 110 130 150 200 300

Generated 5/16/2013 at HPRCC using provisional data. Regional Climate Centers

April Weather Pattern

- **Active weather pattern for April.**
- **Trough in nation's midsection.**



http://www.ncdc.noaa.gov/temp-and-precip/maps.php

Late season snows

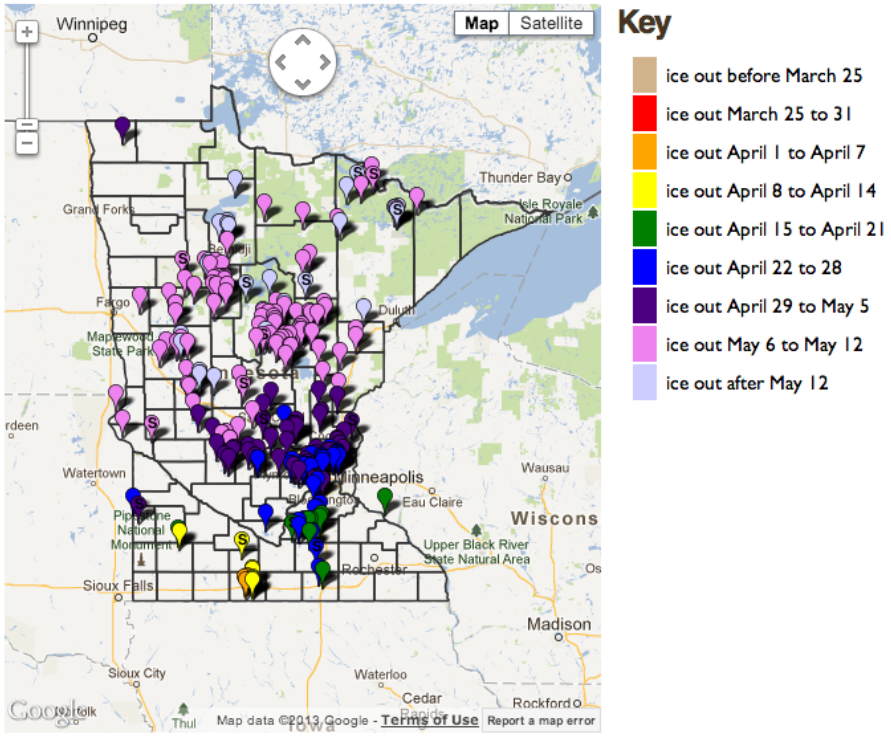
- Most of seasonal snowpack melted in late April.
- Storms brought more snow in early May.
- New monthly records for May:
  Rochester, MN – 14.5”
  Eau Clare, WI – 9.3”
  Des Moines, IA – 6.9”
  Omaha, NE – 3.1”
- Snow as far south as Dodge City, KS and Springfield, MO


Lincoln, NE (courtesy Natalie Umphlett)


Rochester, MN (courtesy MPR)

Lake Ice:
Late thaws and ice coming onshore

2013 Lake Ice Out Dates



Key

- ice out before March 25
- ice out March 25 to 31
- ice out April 1 to April 7
- ice out April 8 to April 14
- ice out April 15 to April 21
- ice out April 22 to 28
- ice out April 29 to May 5
- ice out May 6 to May 12
- ice out after May 12

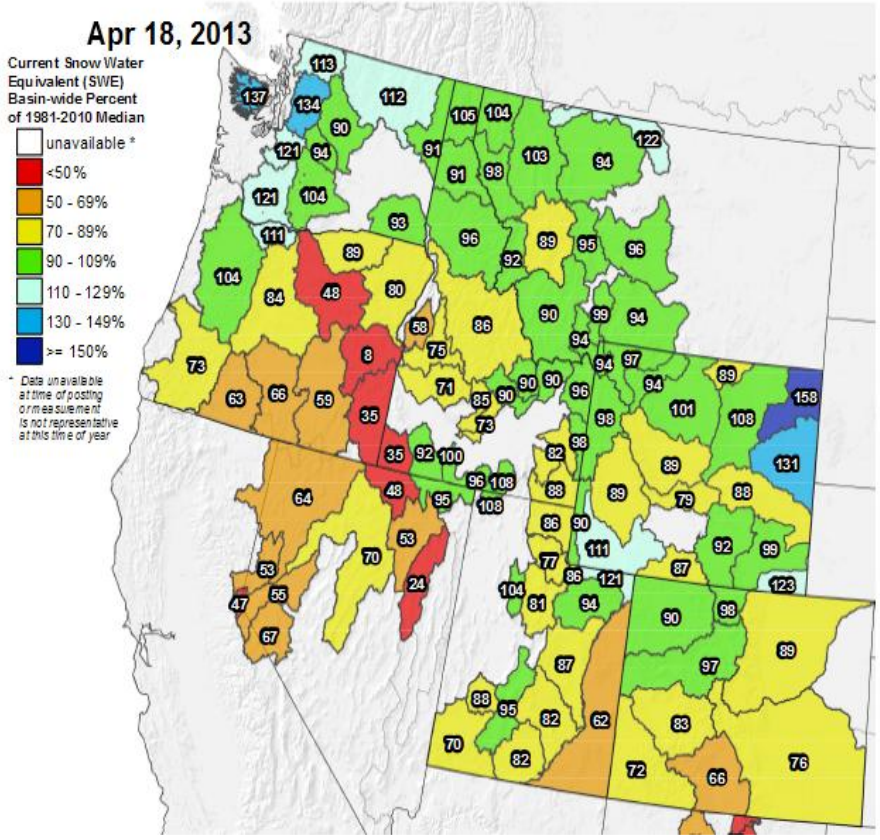
http://www.dnr.state.mn.us/ice_out/index.html

- 'Ice tsunami' on Mille Lacs Lake, MN.

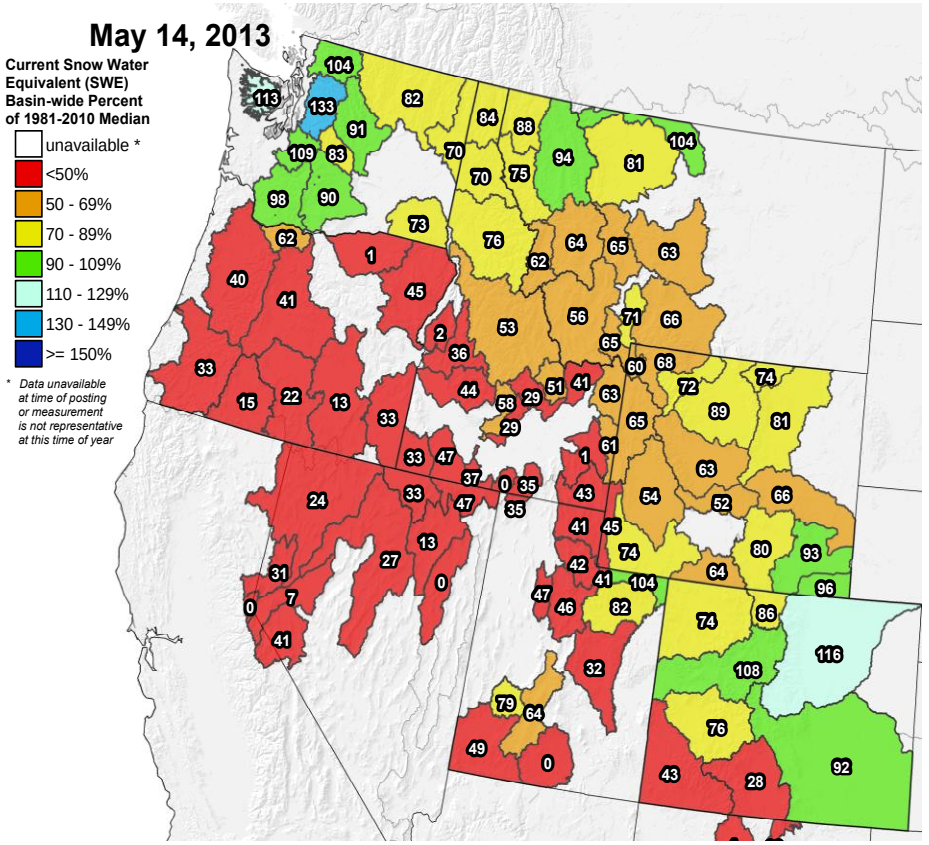
cnn.com

Snow Water Equivalent

18 April, 2013



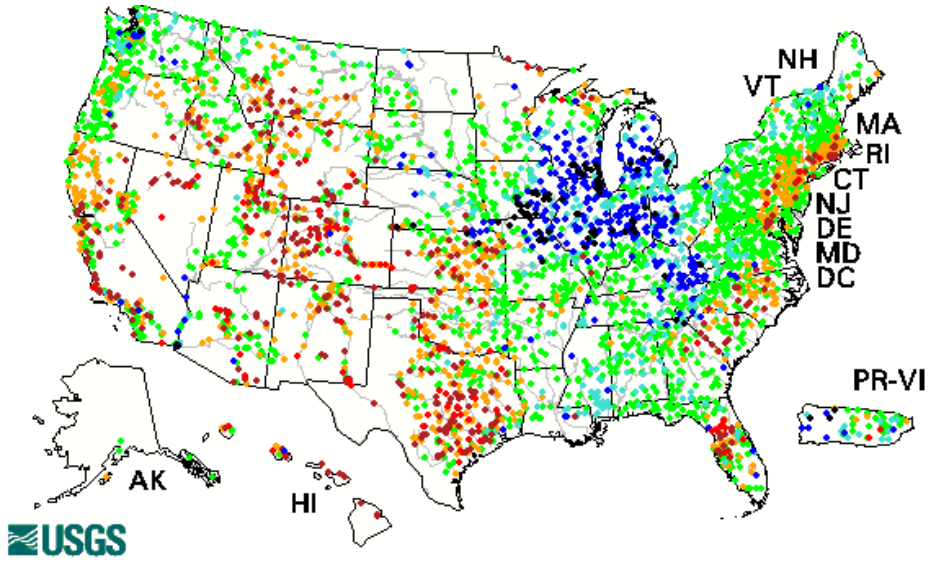
14 May, 2013



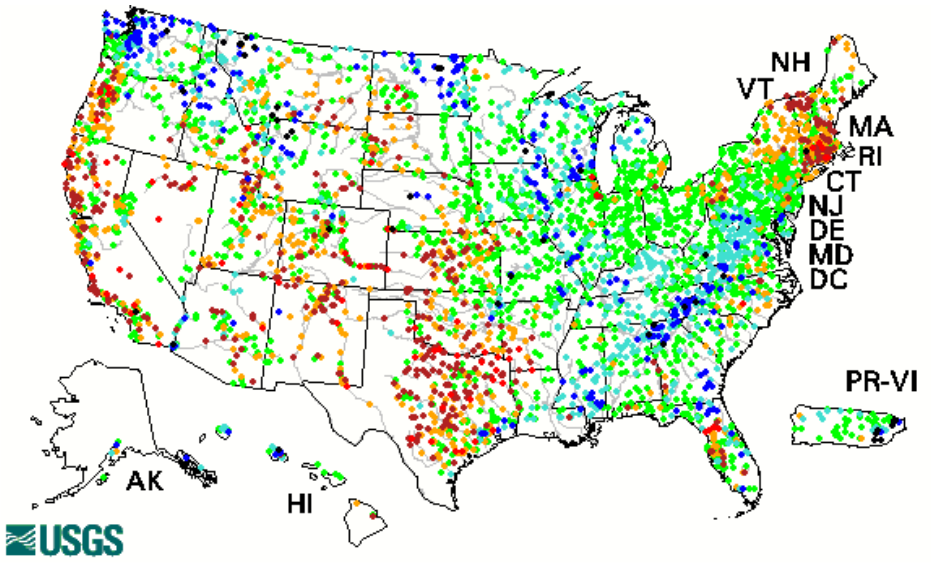
ftp://ftp.wcc.nrcs.usda.gov/data/water/wcs/gis/maps/west_swepctnormal_update.pdf /

Streamflow
7-day average

Wednesday, 17 April 2013



Tuesday, 14 May 2013

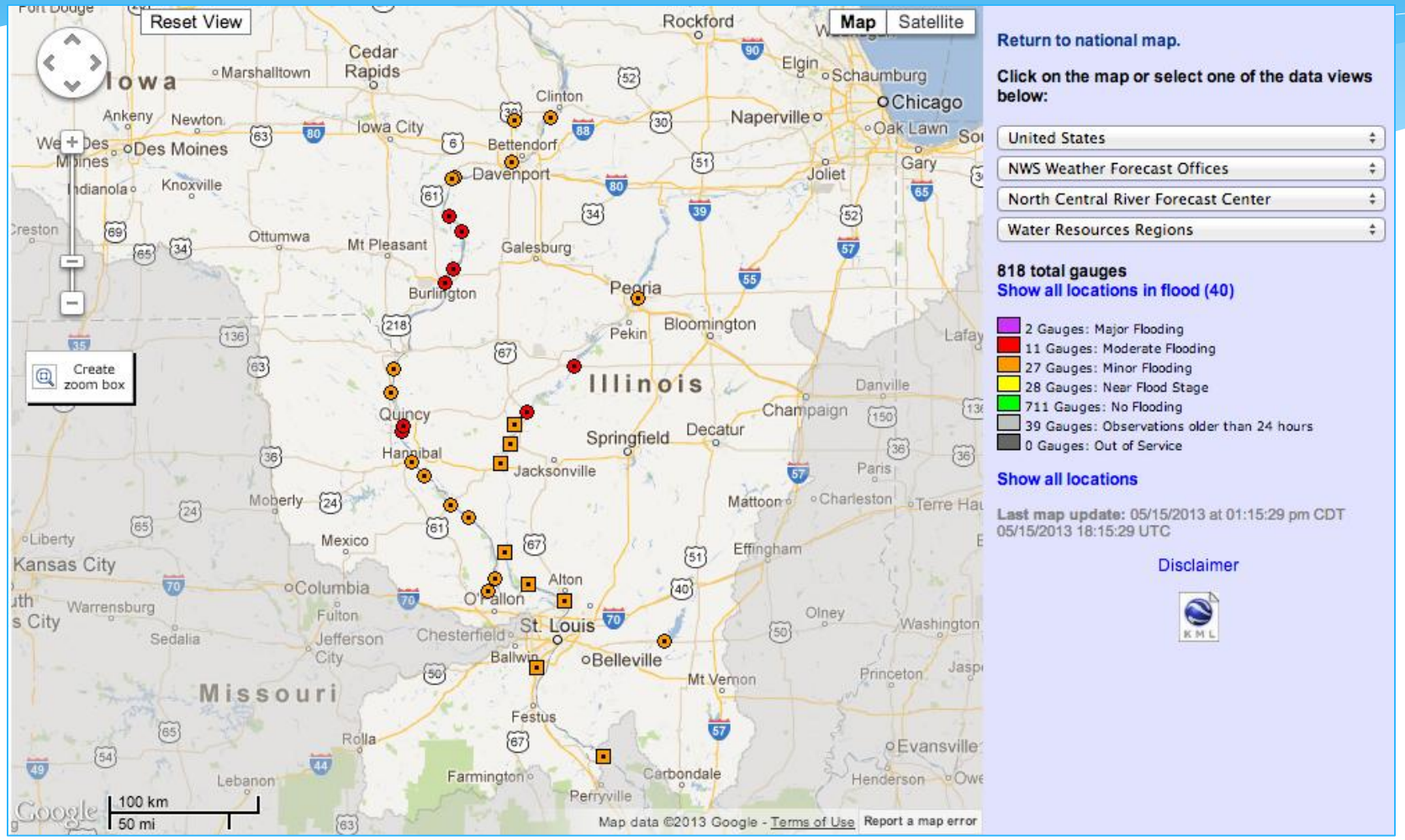


Explanation - Percentile classes						
Low	<10	10-24	25-75	76-90	>90	High
	Much below normal	Below normal	Normal	Above normal	Much above normal	

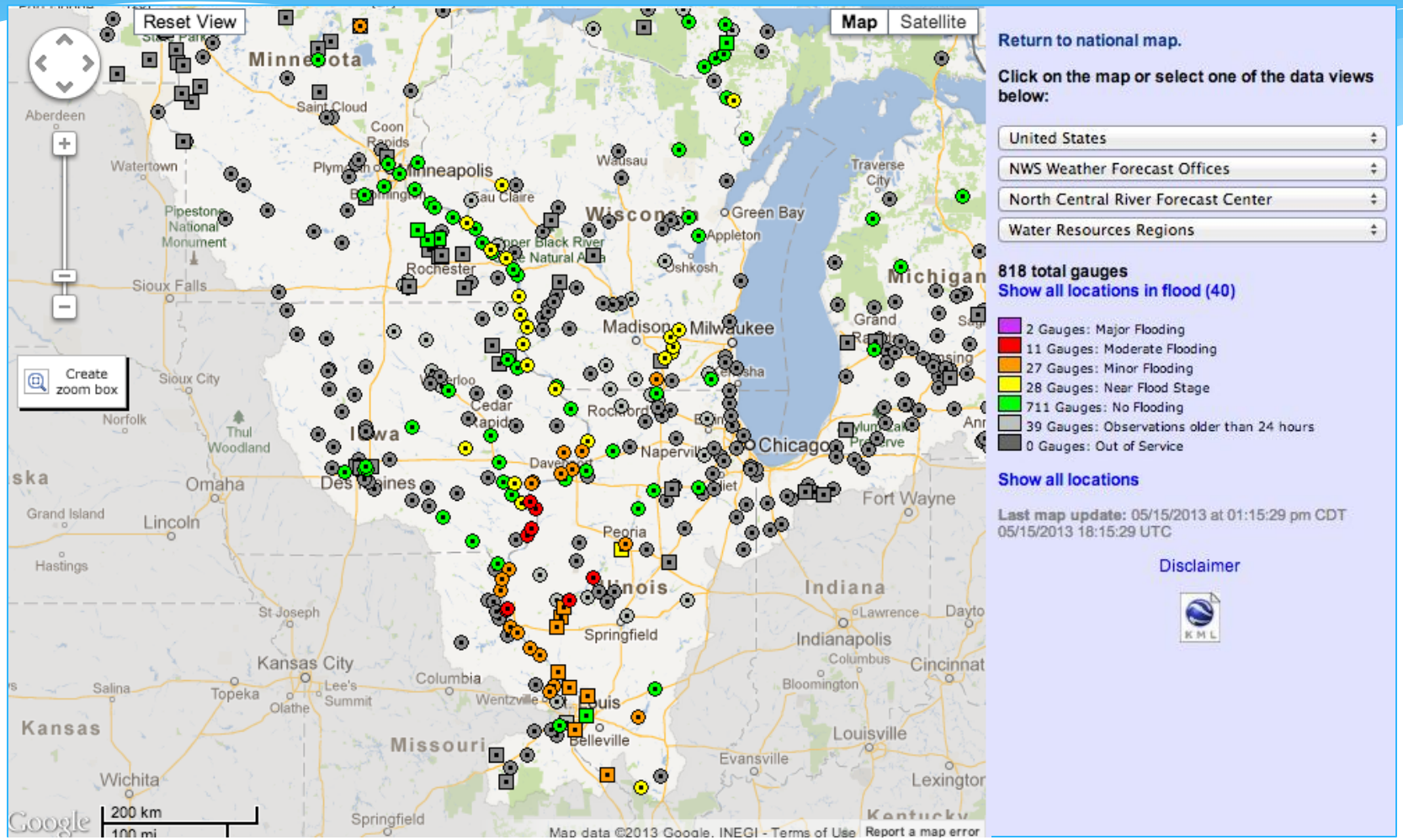
http://waterwatch.usgs.gov/?id=ww_current

Mississippi Flooding

current

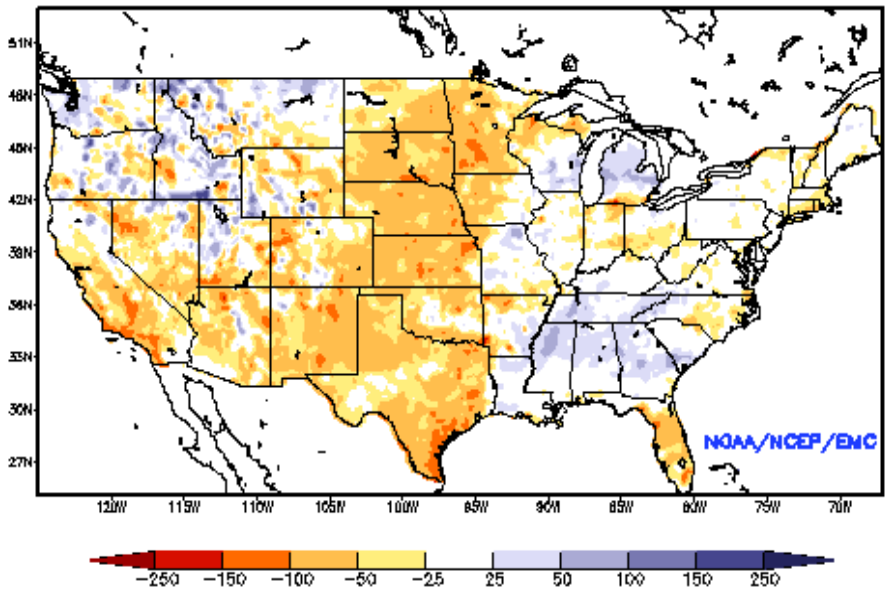


Mississippi Flooding
predicted



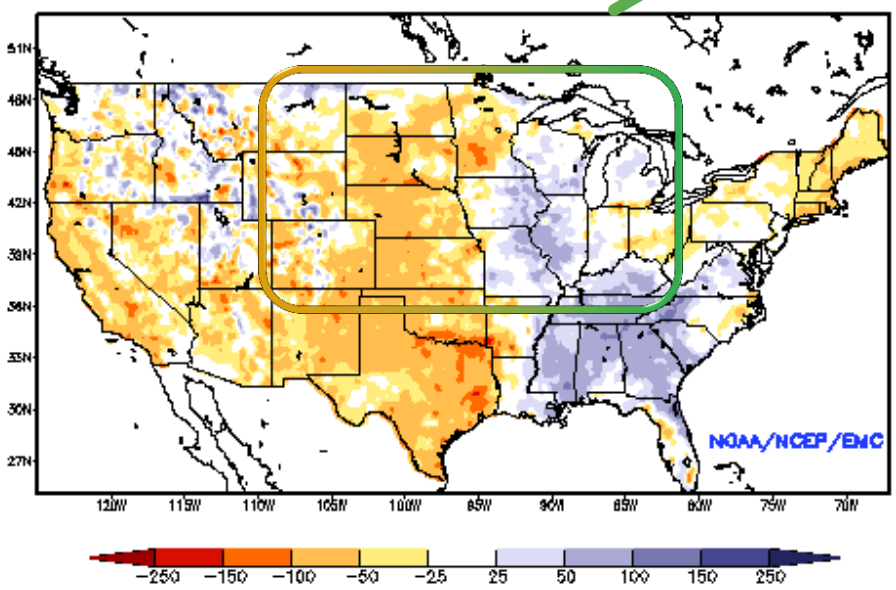
Soil Moisture:
Gradient across the region

13 April 2013



9 May 2013

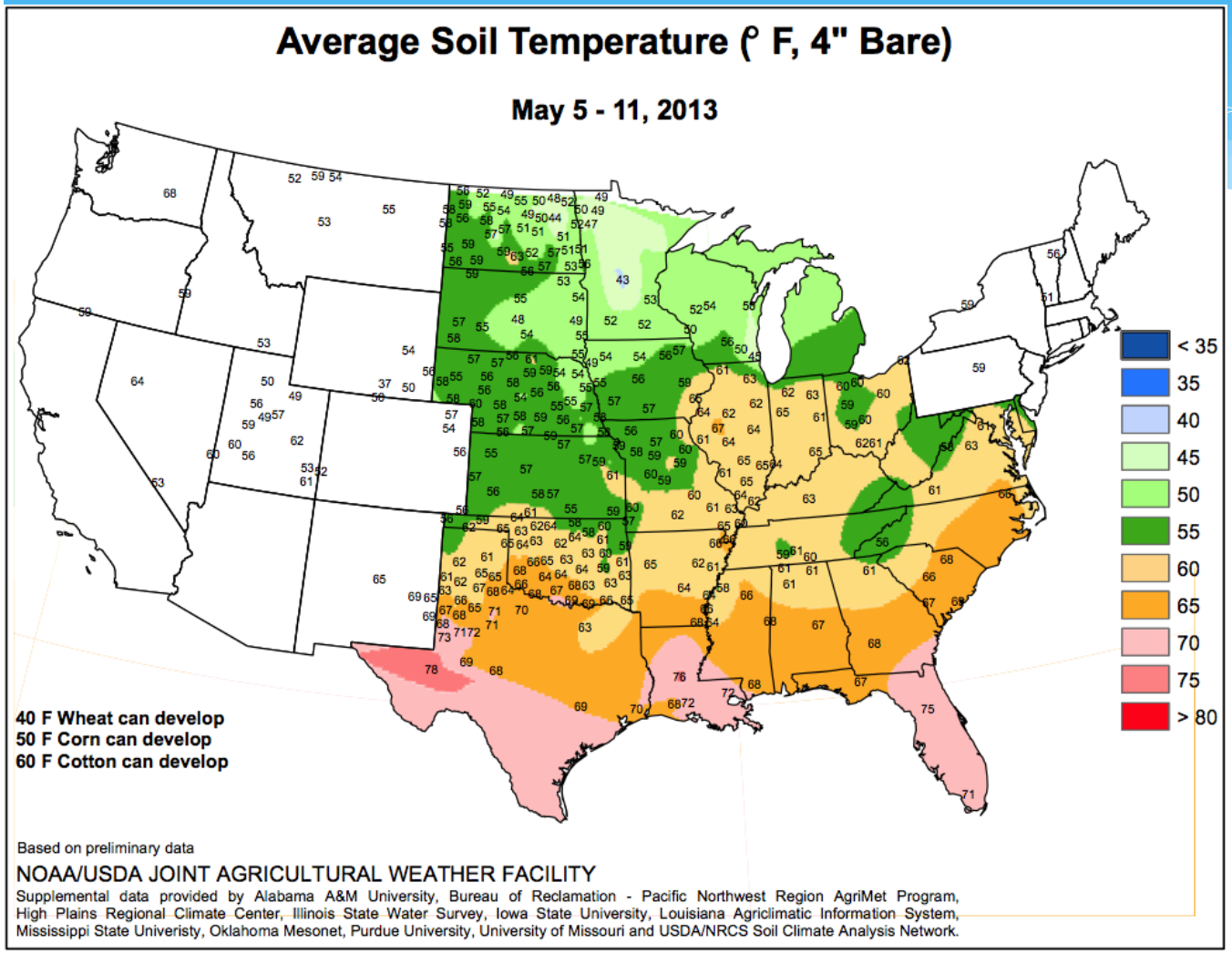
dry → moist



Anomaly in millimeters

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

Soil Temperature (°F)

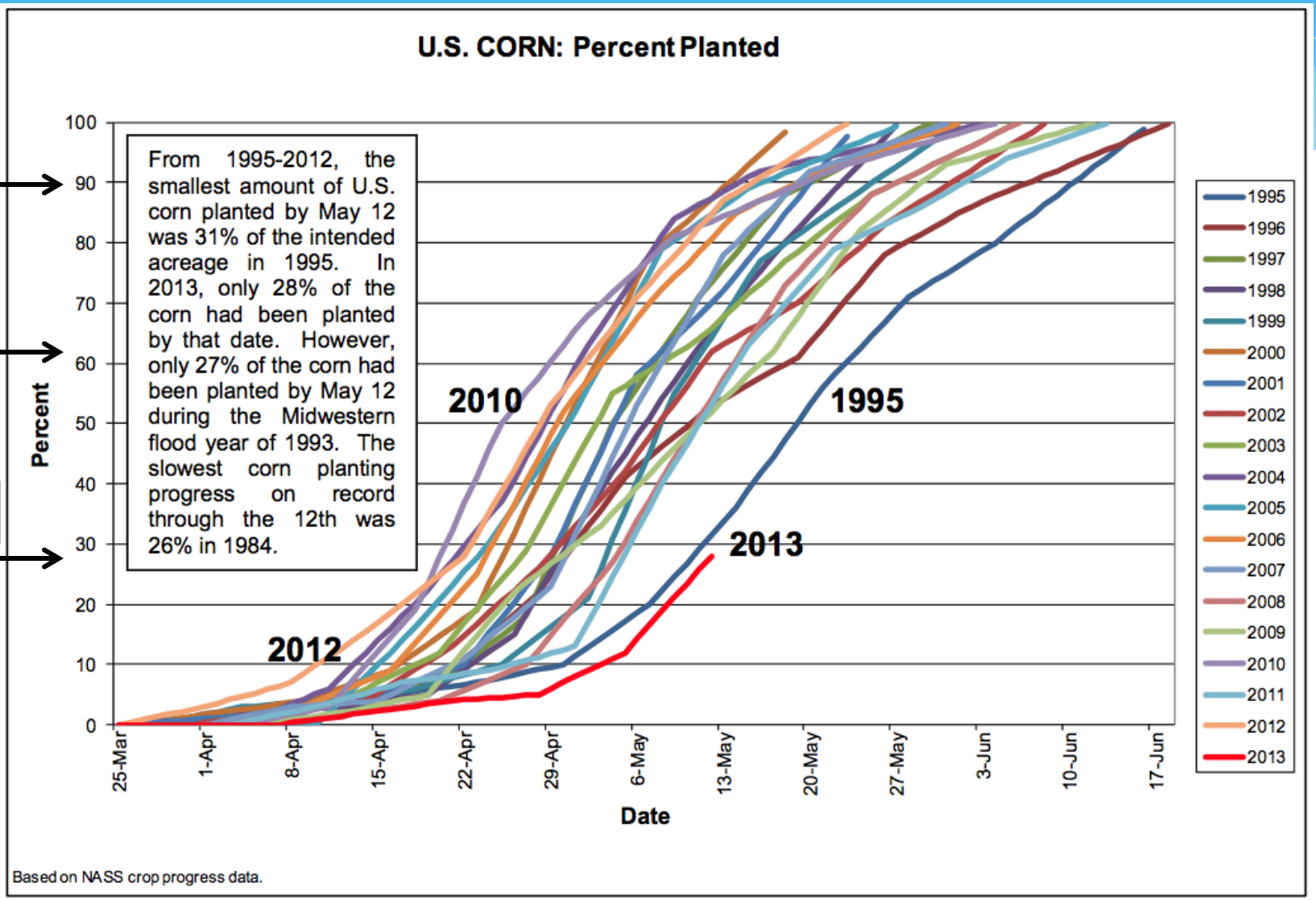


Weekly Weather and Crop Bulletin, Vol. 100, No. 20

NOAA/USDA/JAWF

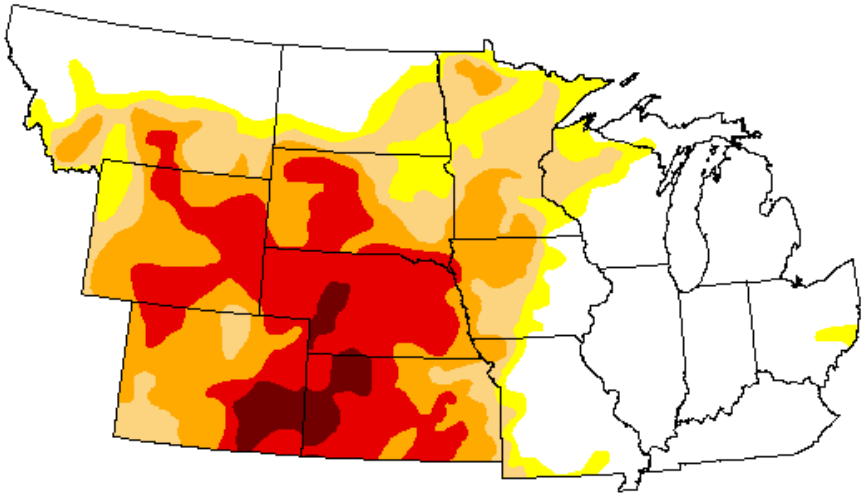
http://www.usda.gov/oce/weather/pubs/Weekly/Wwcb/wwcb.pdf

Corn Planting Progress in US

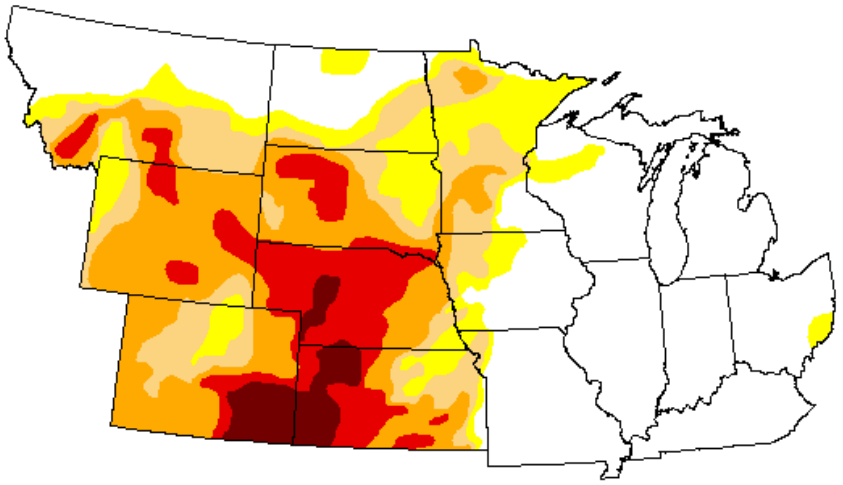


U.S. Drought Monitor: Central Region

16 April 2013



14 May 2013



Drought Conditions (Percent Area)

	None	D0 - D4	D1 - D4	D2 - D4	D3 - D4	D4
Current	43.66	56.34	44.35	31.84	13.51	3.47
Last Week (5/7/2013)	39.07	61.37	51.22	37.29	19.89	2.98
3 Months Ago (2/12/2013)	27.16	72.84	64.48	48.98	29.27	12.93
1 Year Ago (5/15/2012)	61.73	38.27	11.19	3.02	0.00	0.00

Intensity:

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

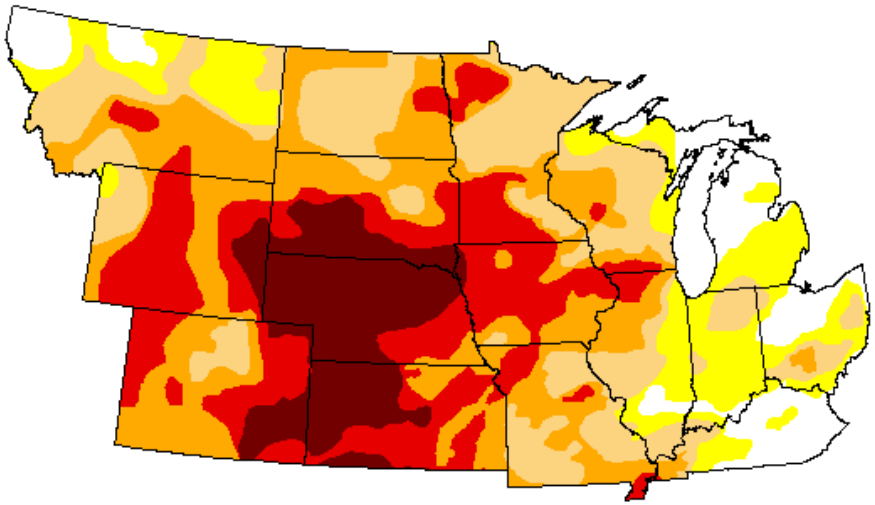
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forcast statements.

http://droughtmonitor.unl.edu

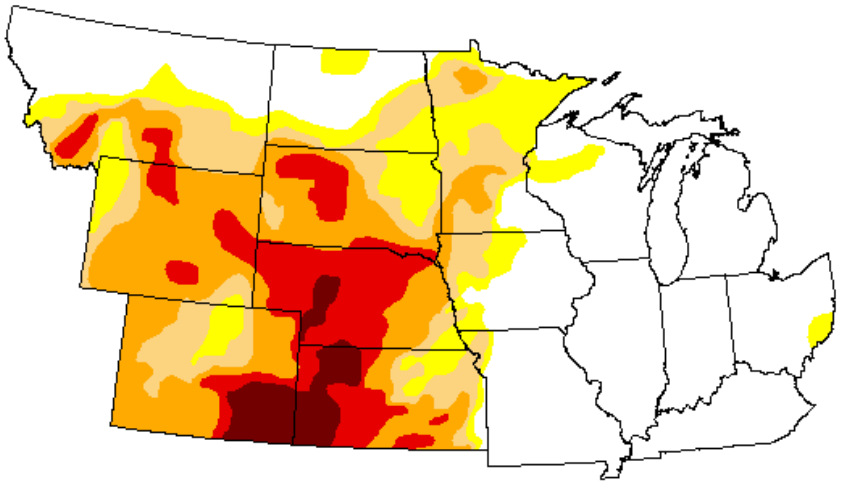
Released Thursday, May 16, 2013
Rich Tinker, Climate Prediction Center/NCEP/NWS/NOAA

U.S. Drought Monitor: Central Region

16 October 2012



14 May 2013



Drought Conditions (Percent Area)

	None	D0 - D4	D1 - D4	D2 - D4	D3 - D4	D4
10/16/12	8.16	91.84	79.43	57.24	32.71	12.22
05/16/13	43.66	56.34	44.35	31.84	13.51	3.47

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.

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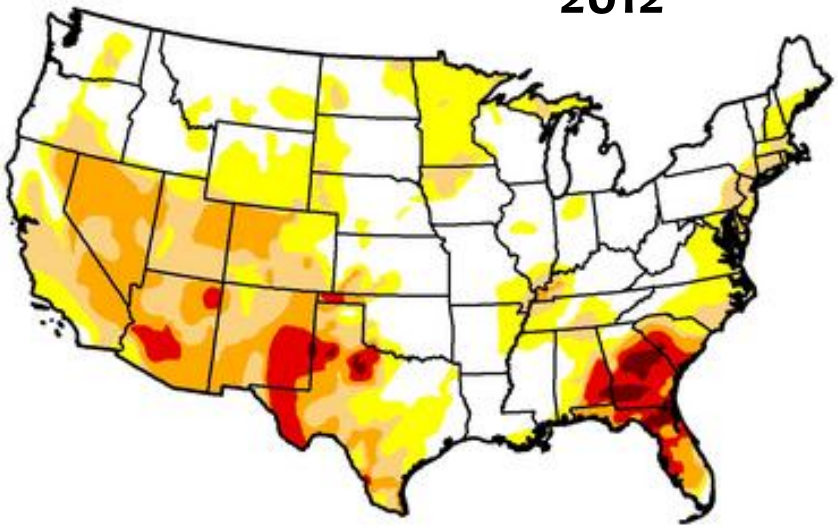
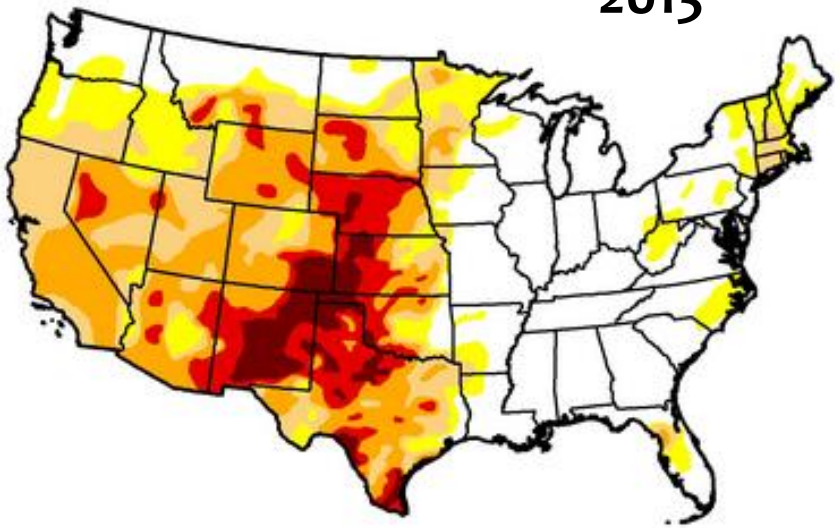
US Drought Monitor mid-May 2012 vs. 2013

2012

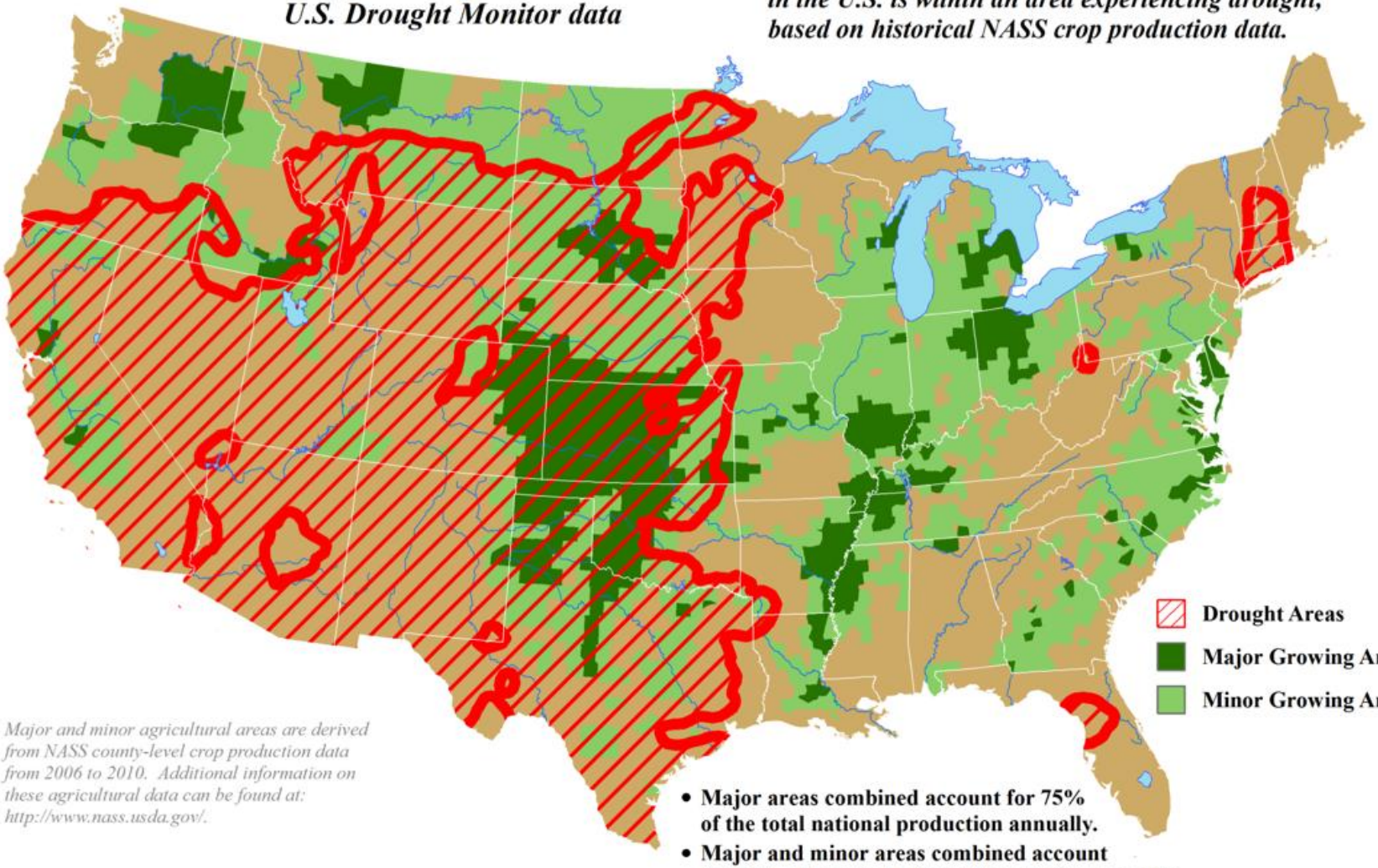


2013



Week	Nothing	D0-D4	D1-D4	D2-D4	D3-D4	D4
May 15, 2012	45.21	54.79	33.64	18.39	5.71	1.02
May 14, 2013	38.27	61.73	47.66	32.30	13.64	4.40

U.S. Winter Wheat Areas Experiencing Drought

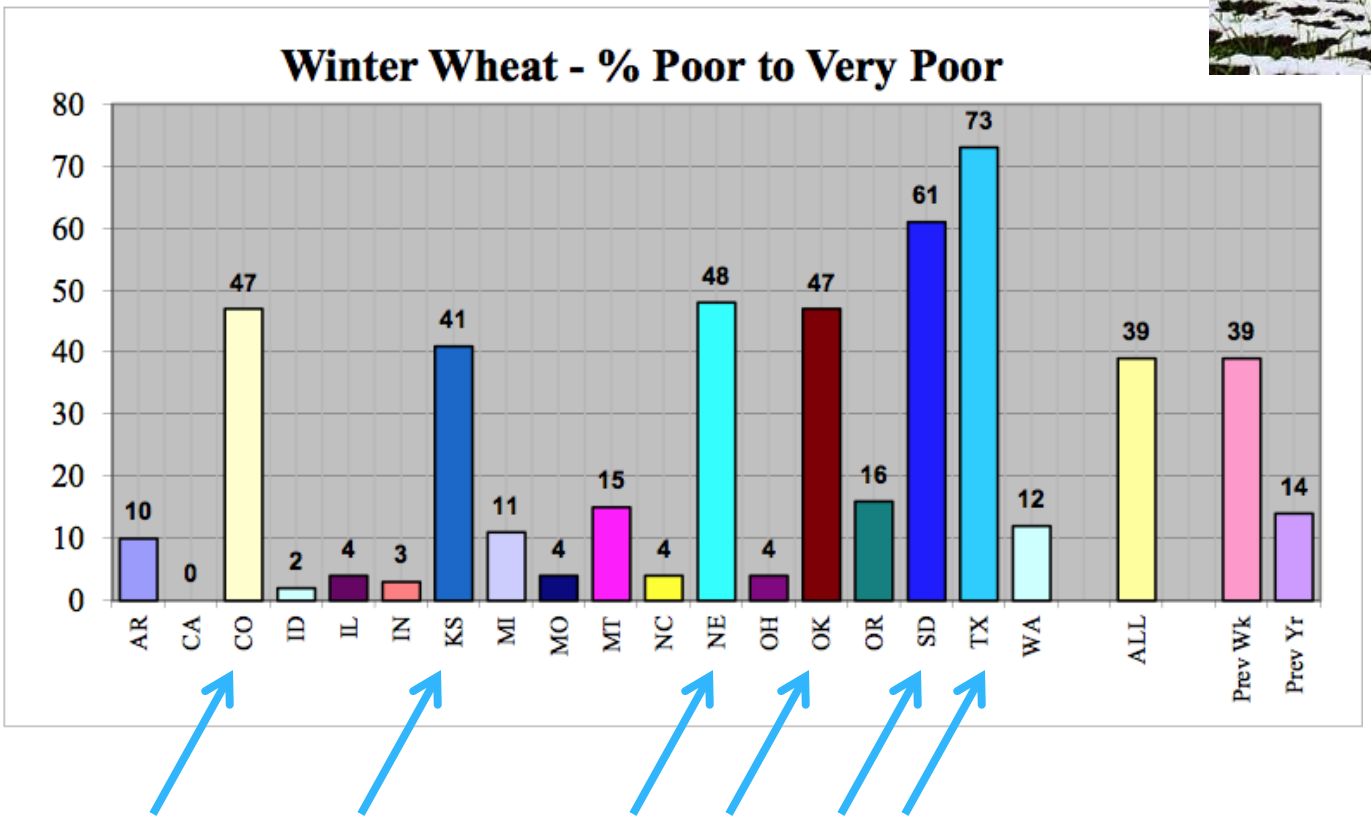


http://www.usda.gov/oce/weather/Drought/AgInDrought.pdf

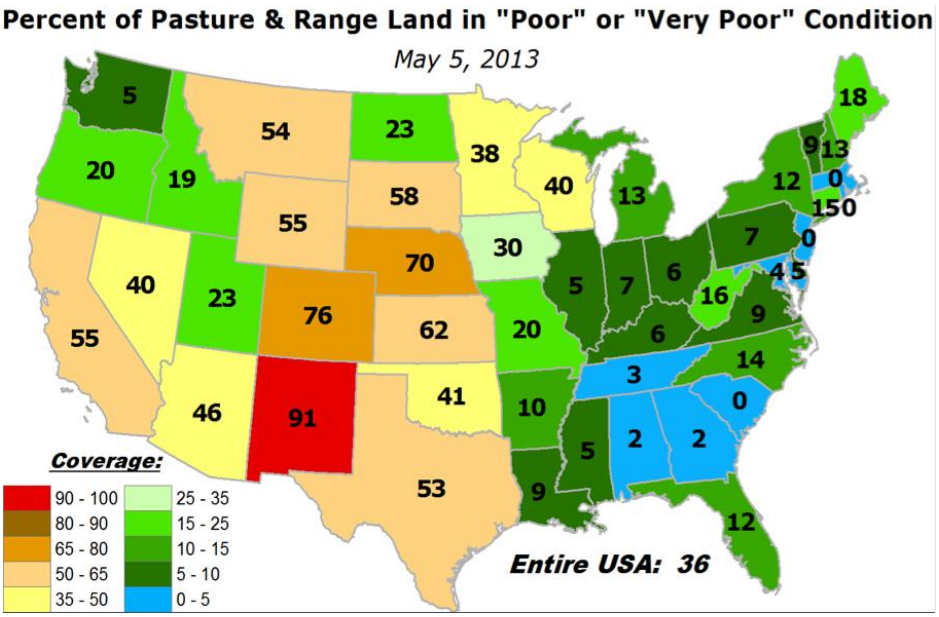
Winter Wheat Condition

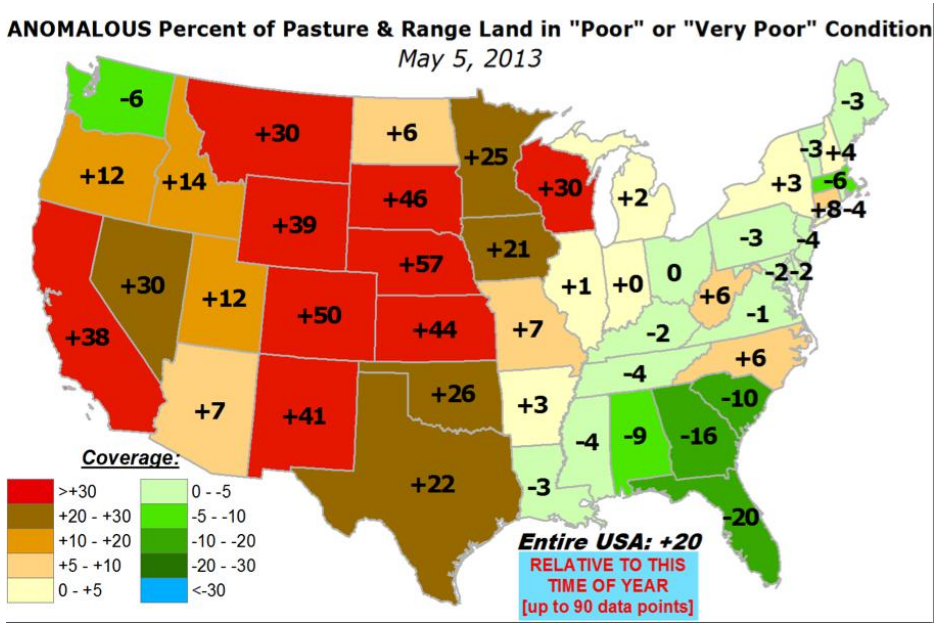
kansasagnetwork.com

As of May 12



Pasture Conditions

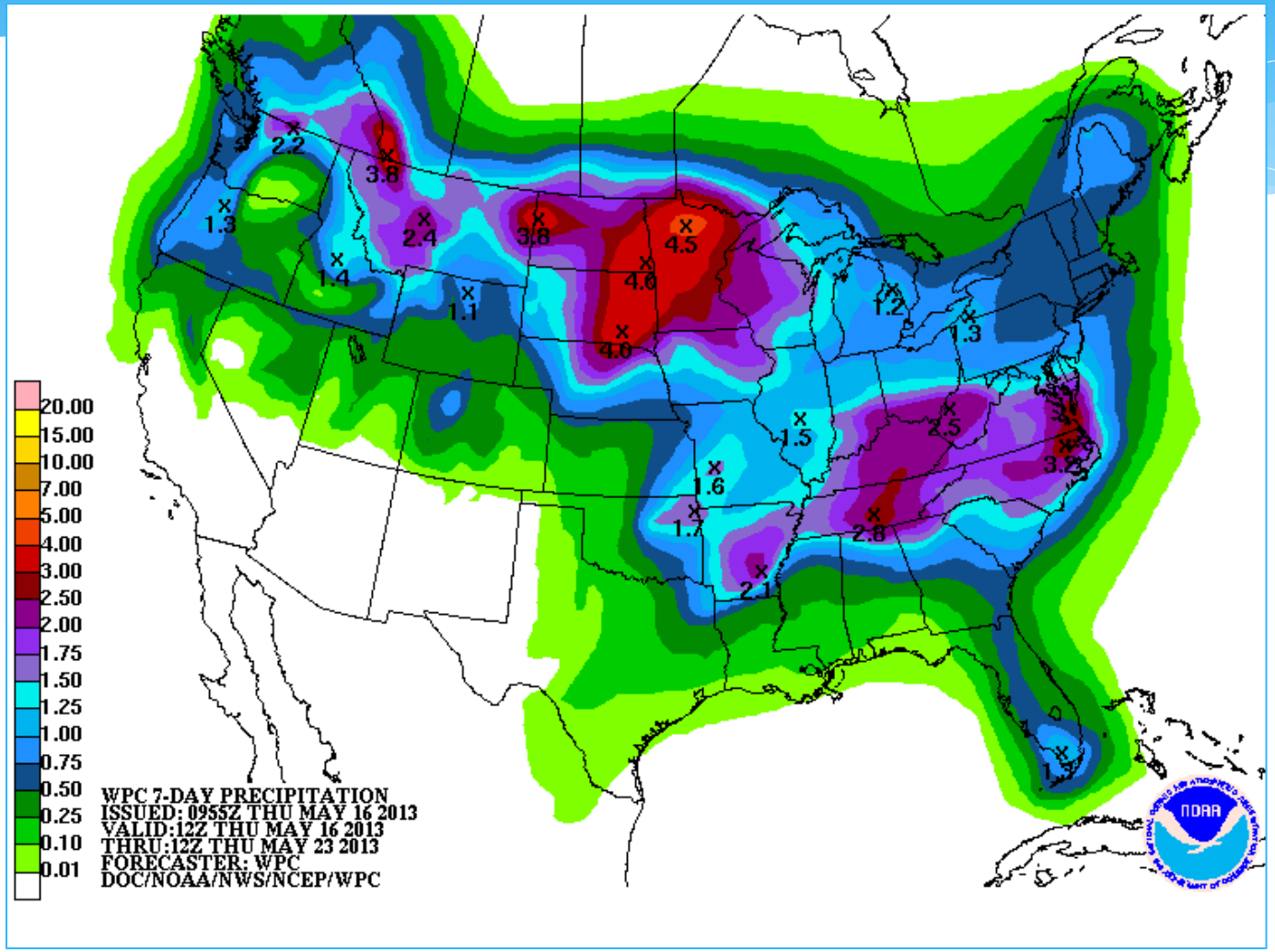




Going Forward

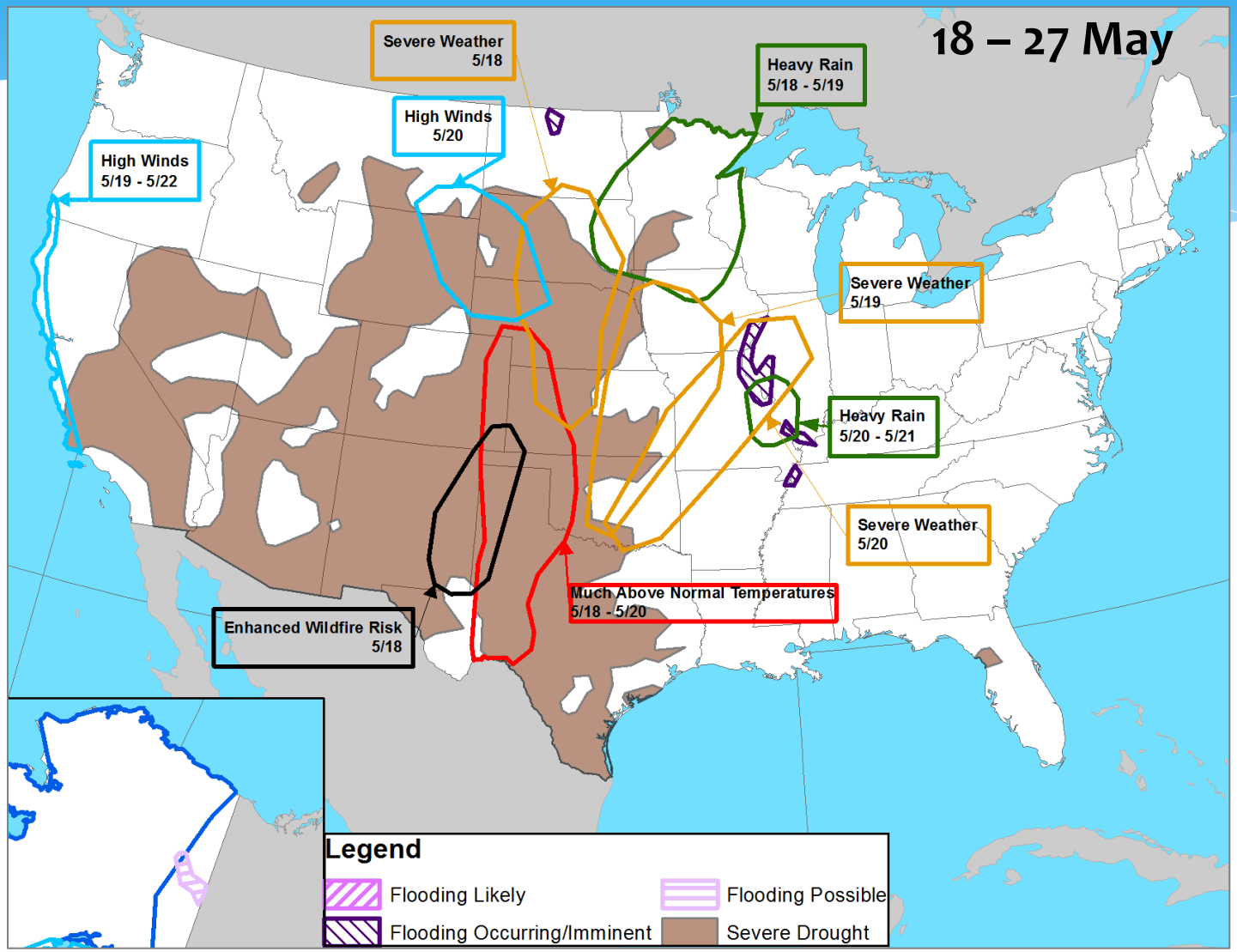
* 7-day precipitation forecast
* 8-14 day outlook
* June
* Summer (Jun – Aug)
* Seasonal Drought and Seasonal Flood Outlooks

Precipitation forecast for the next 7 days



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

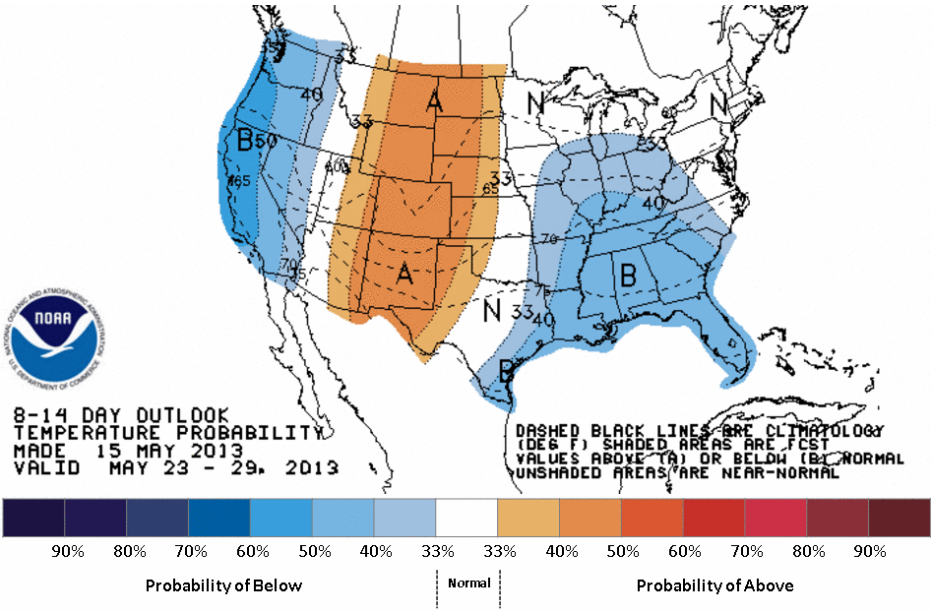
Hazards Outlook



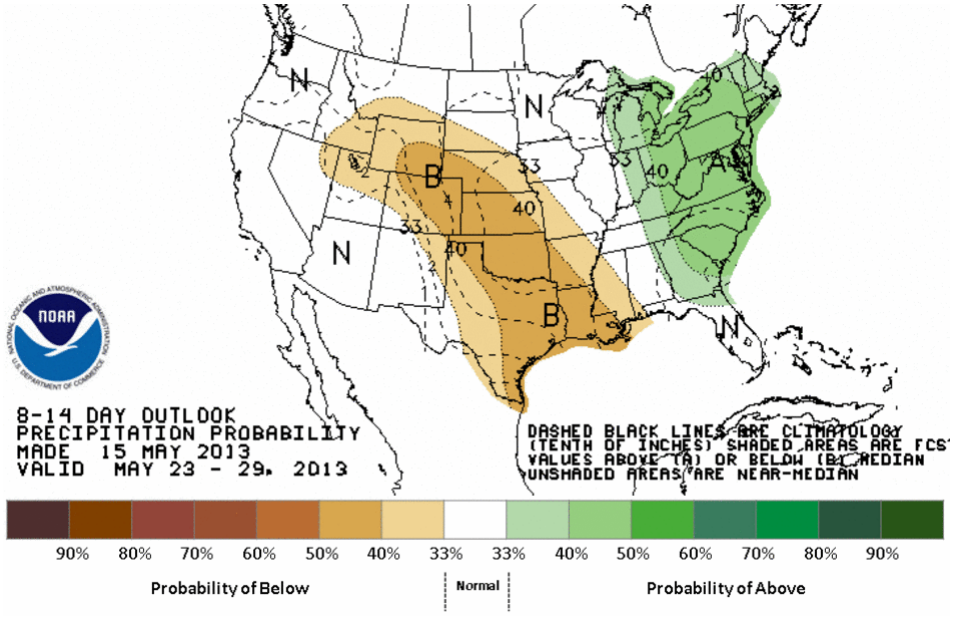
http://www.cpc.ncep.noaa.gov/products/predictions/threats/hazards_d3_7_contours.png

Temperature and Precipitation Probabilities

23 – 29 May, 2013



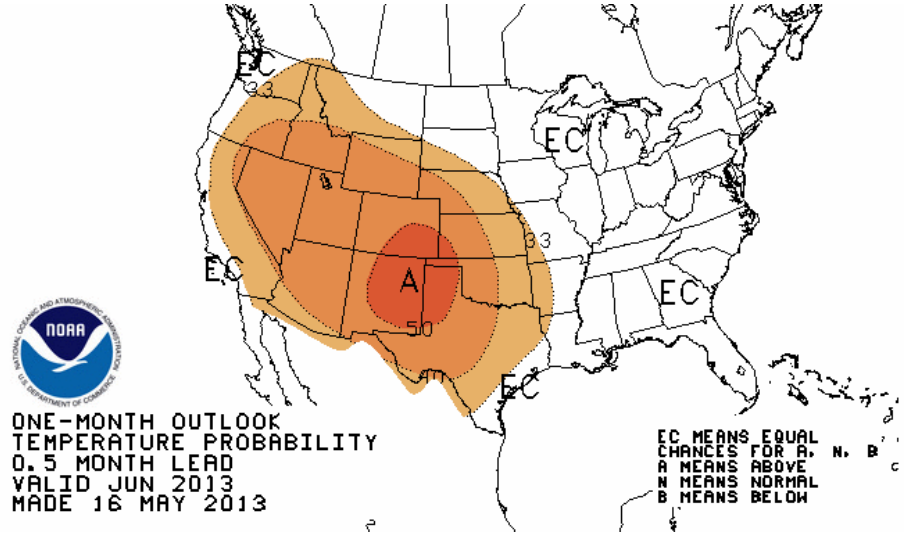
Temperature



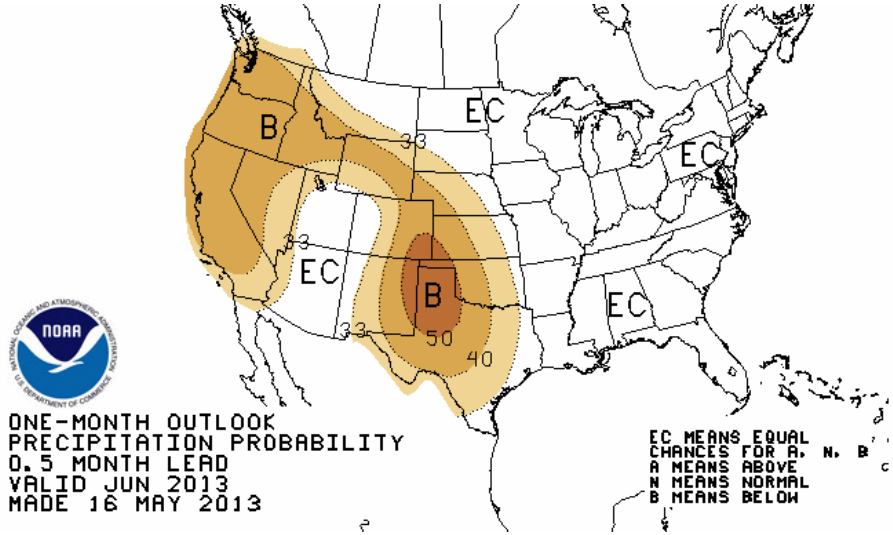
Precipitation

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

June Temperature and Precipitation Probabilities



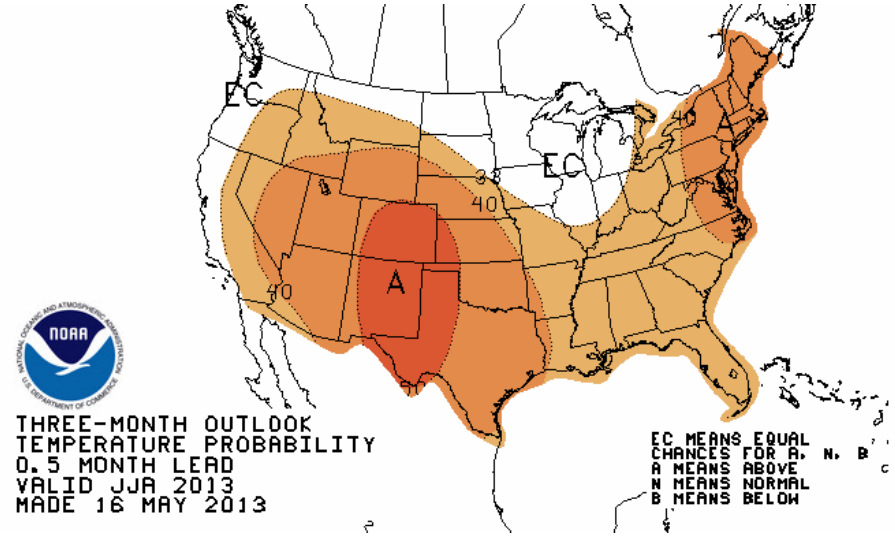
Temperature



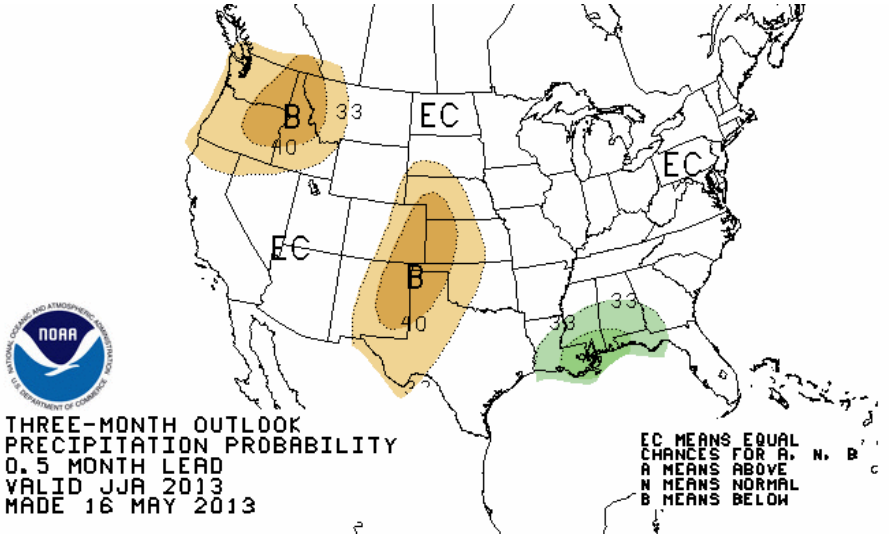
Precipitation

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

Summer Temperature and Precipitation Probabilities



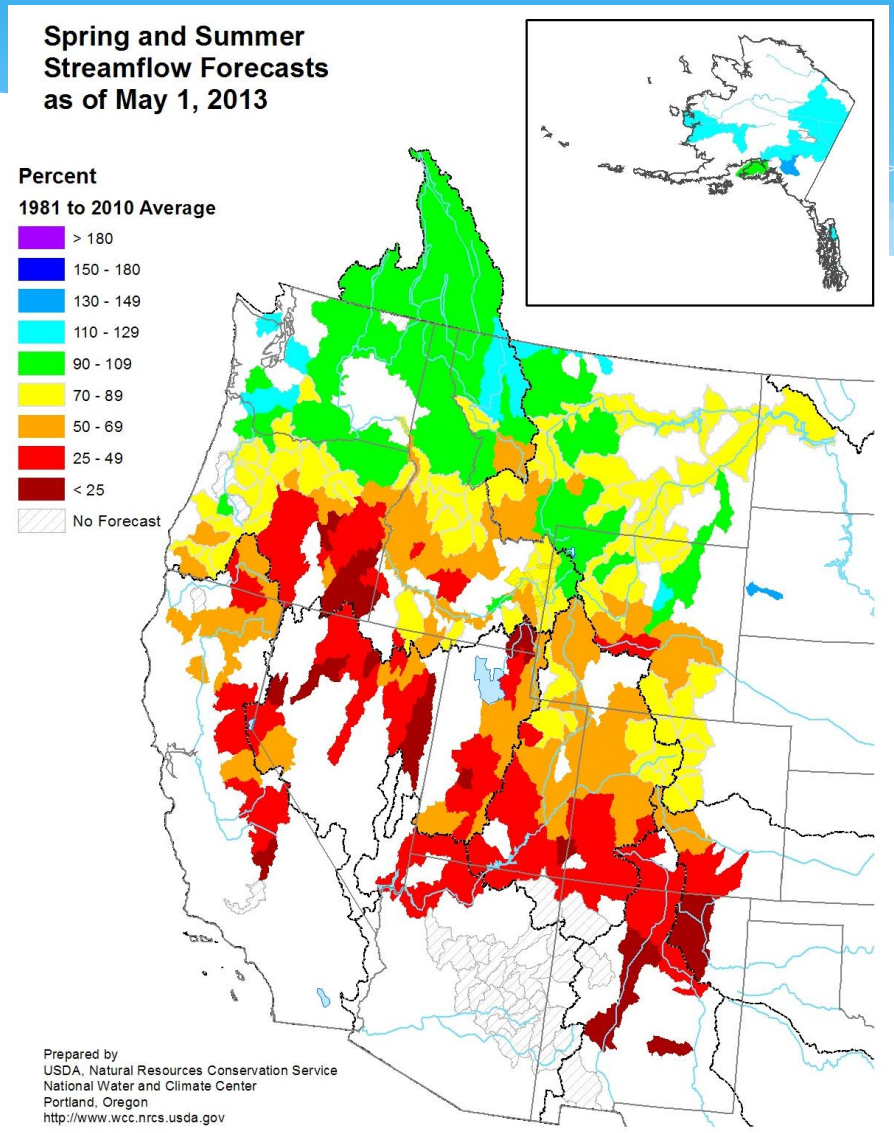
Temperature



Precipitation

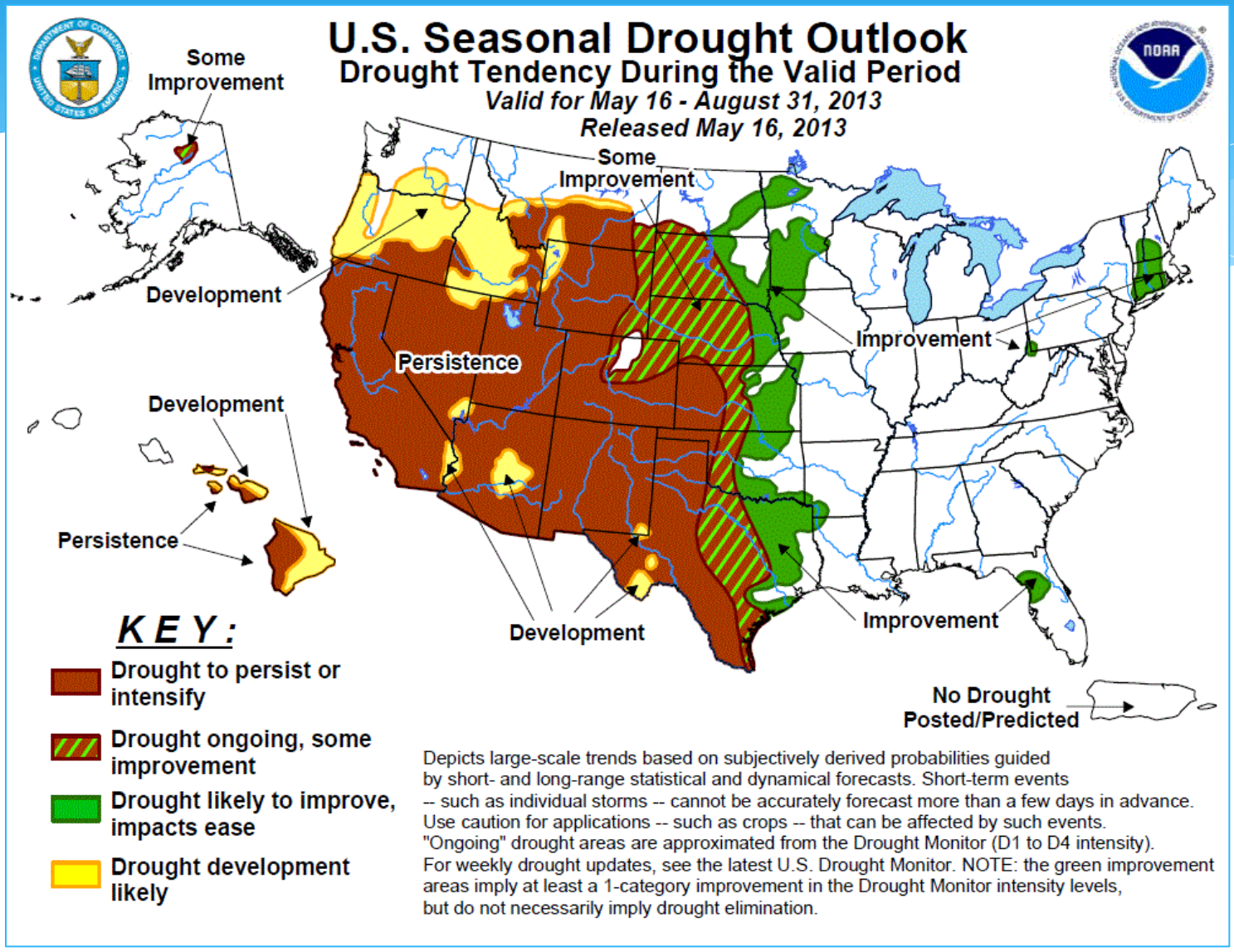
http://www.cpc.ncep.noaa.gov/products/predictions/90day/

Streamflow Forecast



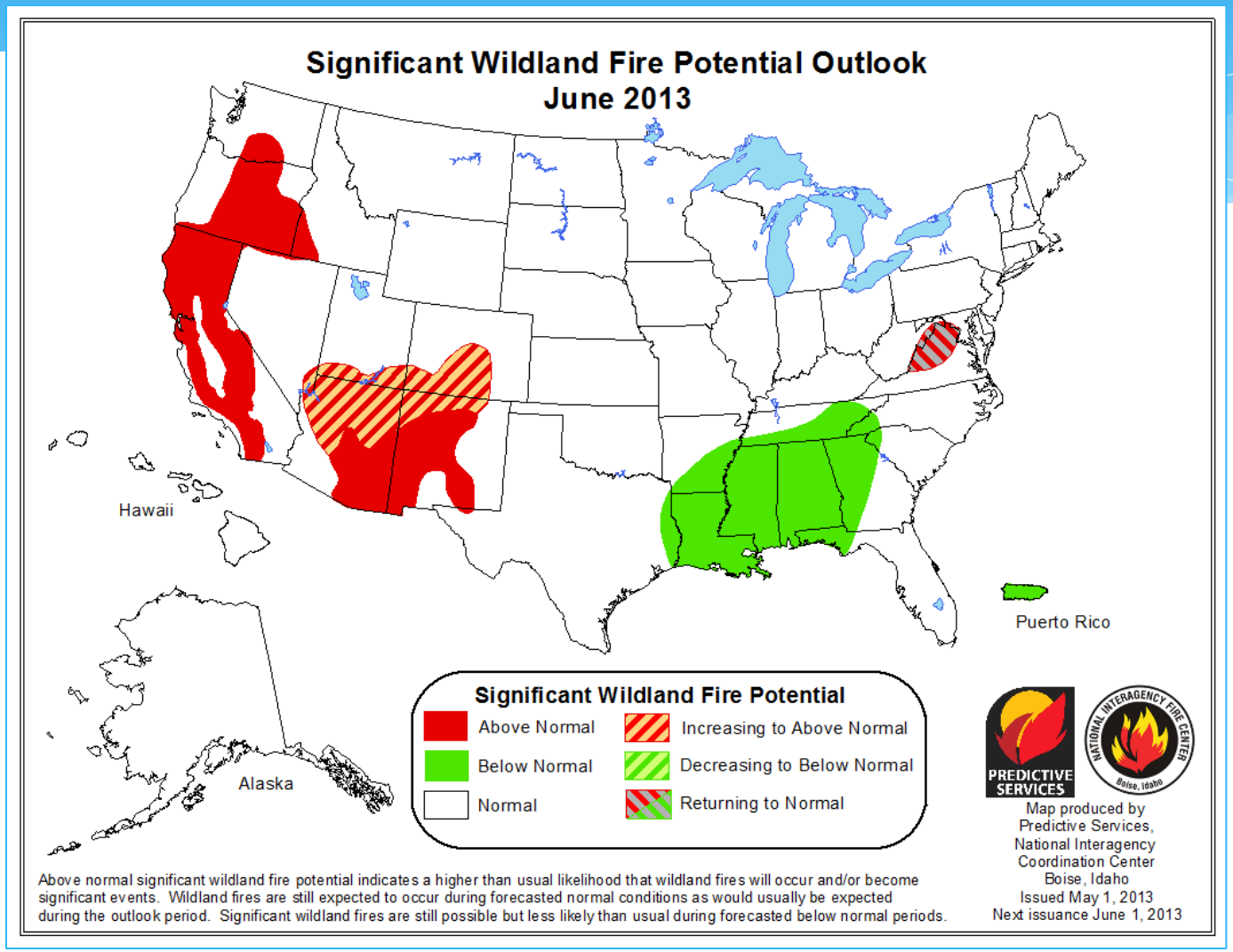
ftp://ftp.wcc.nrcs.usda.gov/data/water/wcs/gis/maps/west_swepctnormal_update.pdf /

Drought Outlook



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

Fire Danger for June



http://www.predictiveservices.nifc.gov/outlooks/outlooks.htm

Summary

* **Recent Conditions**
  * Colder and wetter than normal for much of region with late season snows.
  * Near record to record-setting river crests along Mississippi and Illinois Rivers.
  * Spring freezes and extreme May heat affecting already stressed winter wheat.
  * Delayed spring field work throughout region due to wet and cold conditions.

Summary

* **Outlooks**
  * ENSO neutral conditions are forecast through Fall 2013
  * Drought conditions will continue in west, improvement possible in Central U.S.
  * Short-term forecast calls for precipitation across much of U.S. along with severe weather potential.
  * Outlooks continue warmth in west and central, dry in central and southern Plains.

Further Information - Partners

- **Today's and Past Recorded Presentations and :**
- *http://mrcc.isws.illinois.edu/webinars.htm*
  http://www.hprcc.unl.edu/webinars.php
- 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:**
  * Martha Shulski: mshulski3@unl.edu 402-472-6711
  * Doug Kluck: doug.kluck@noaa.gov 816-994-3008
  * 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