Midwest and Great Plains Climate-Drought Outlook 16 April 2015

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Wildfire Wind Cave NP– Rapid City Journal

General Information

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

- **Next Regular Climate/Drought Outlook Webinar**
  - May 21, 2015 (1 PM CDT)
- **Access to Future Climate Webinars and Information**
- http://www.drought.gov/drought/content/regional-programs/regional-drought-webinars

- *http://mrcc.isws.illinois.edu/webinars.htm*
- *http://www.hprcc.unl.edu/webinars.php*
- **Open for questions at the end**

Agenda

* Current Conditions
* Impacts
  * Corn Belt/east-west
  * Wheat Belt
  * Missouri River
  * Great Lakes
  * General Spring Ag
* Outlooks
  * El Niño

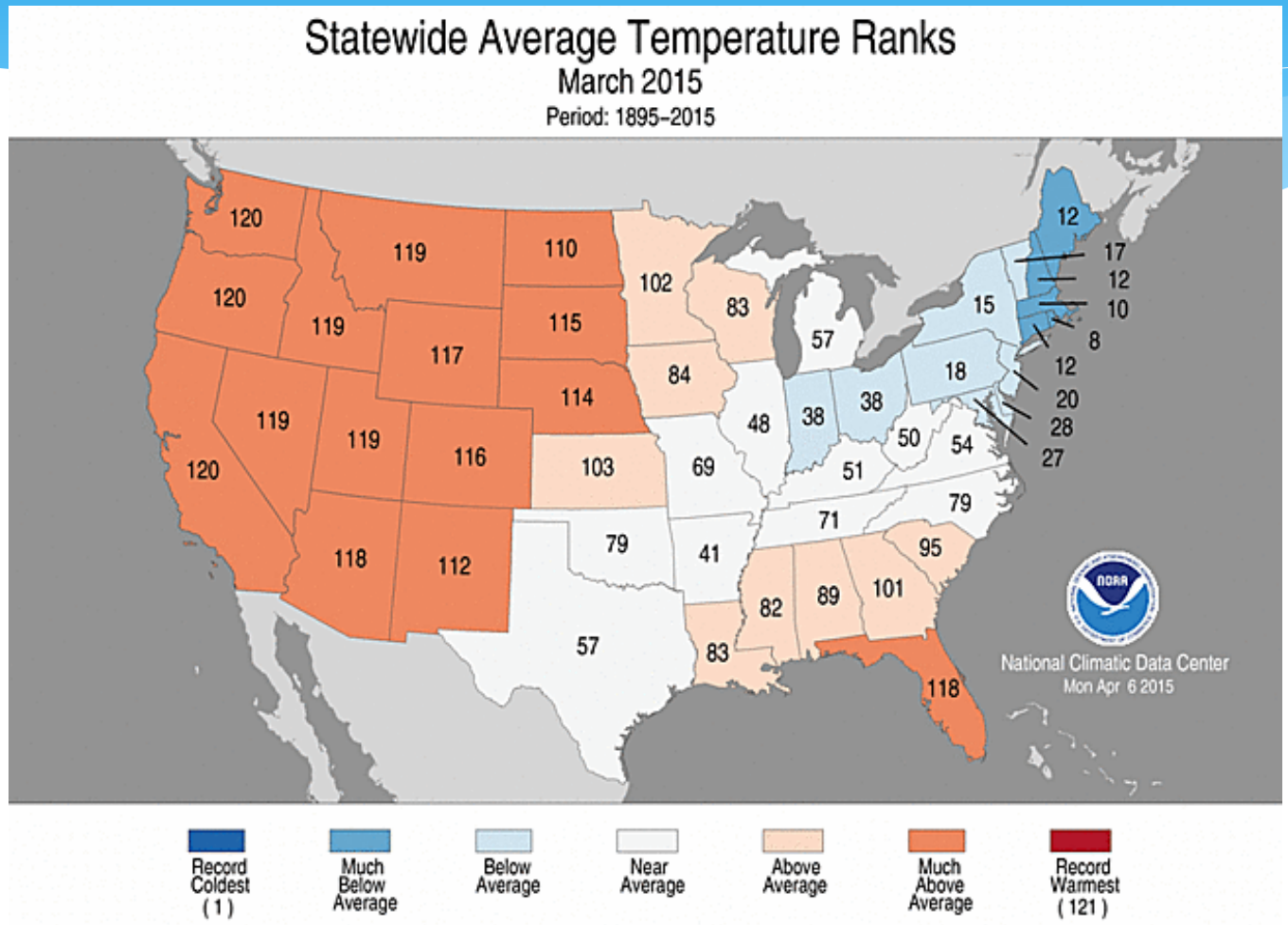
Fire University of Mary Bismarck, ND – Bismarck Tribune

Review/Current Conditions

March Temperature Recap

The pattern shows a clear ridge – trough pattern across the country.

Warm to the western half of country – cold northeast US

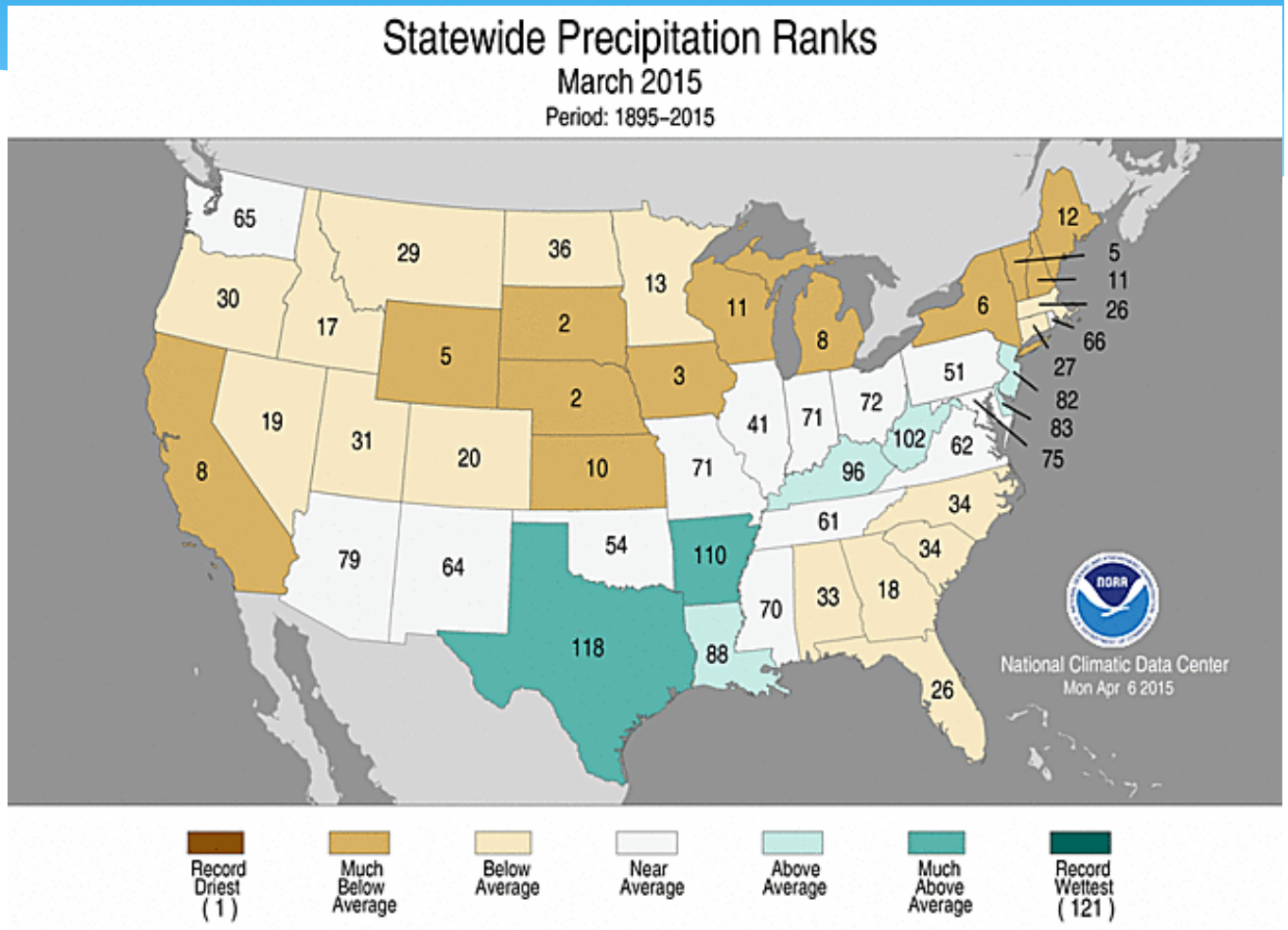


http://www.ncdc.noaa.gov/temp-and-precip/maps.php?

March Precipitation Recap

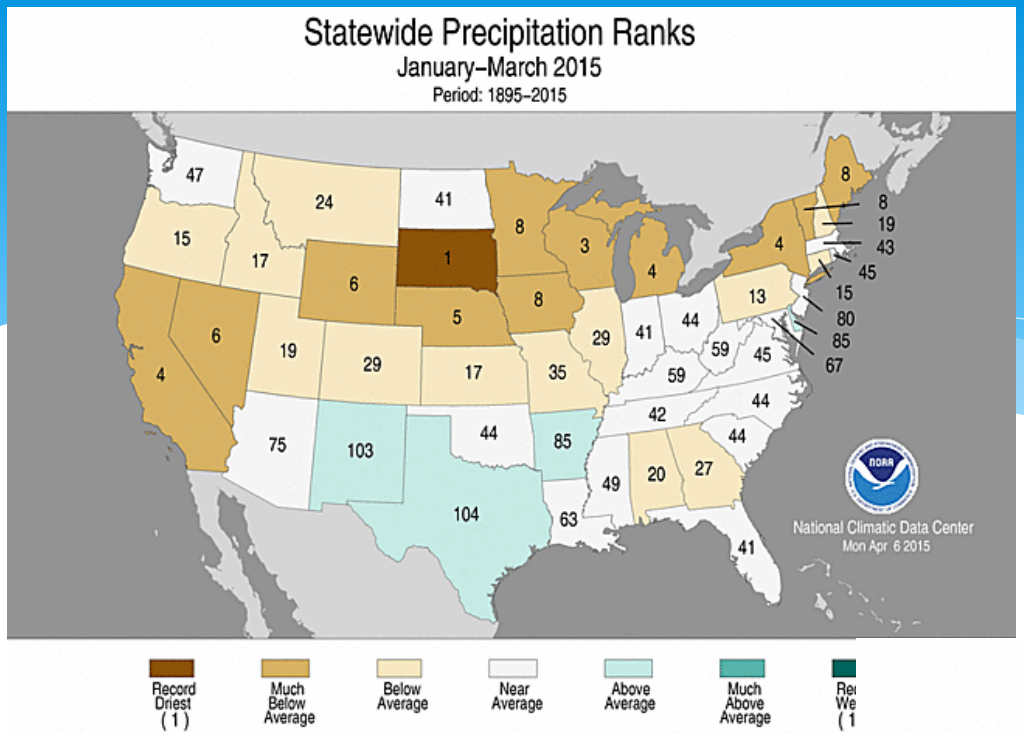
Near record dry northern-central plains

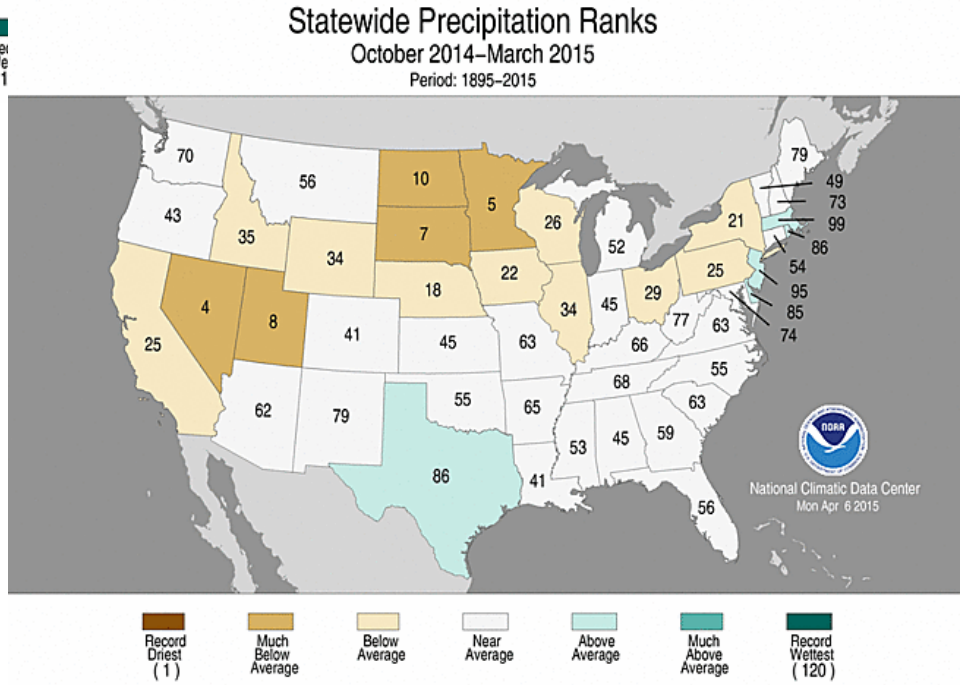
Wetter than average eastern Corn Belt



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

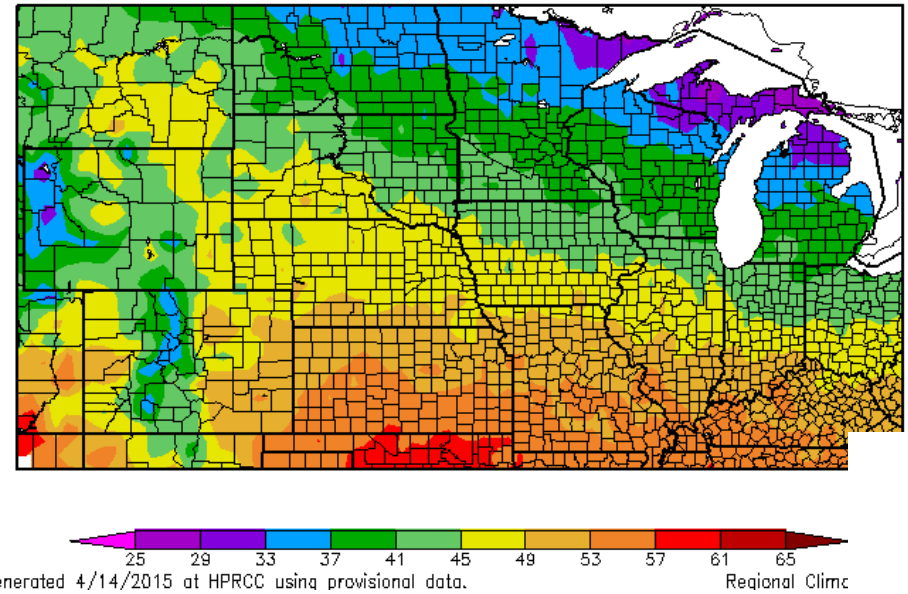
1 January and Water Year Precipitation



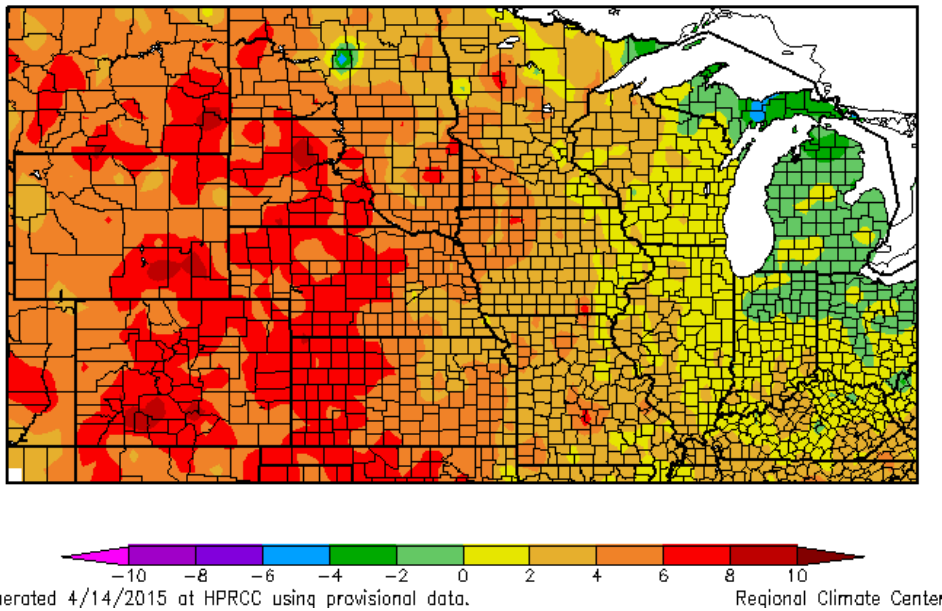


Most recent 30-day temperatures

Temperature (F)
3/15/2015 – 4/13/2015



Departure from Normal Temperature (F)
3/15/2015 – 4/13/2015



Warm overall – warmest to the west, slightly cool MI.

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

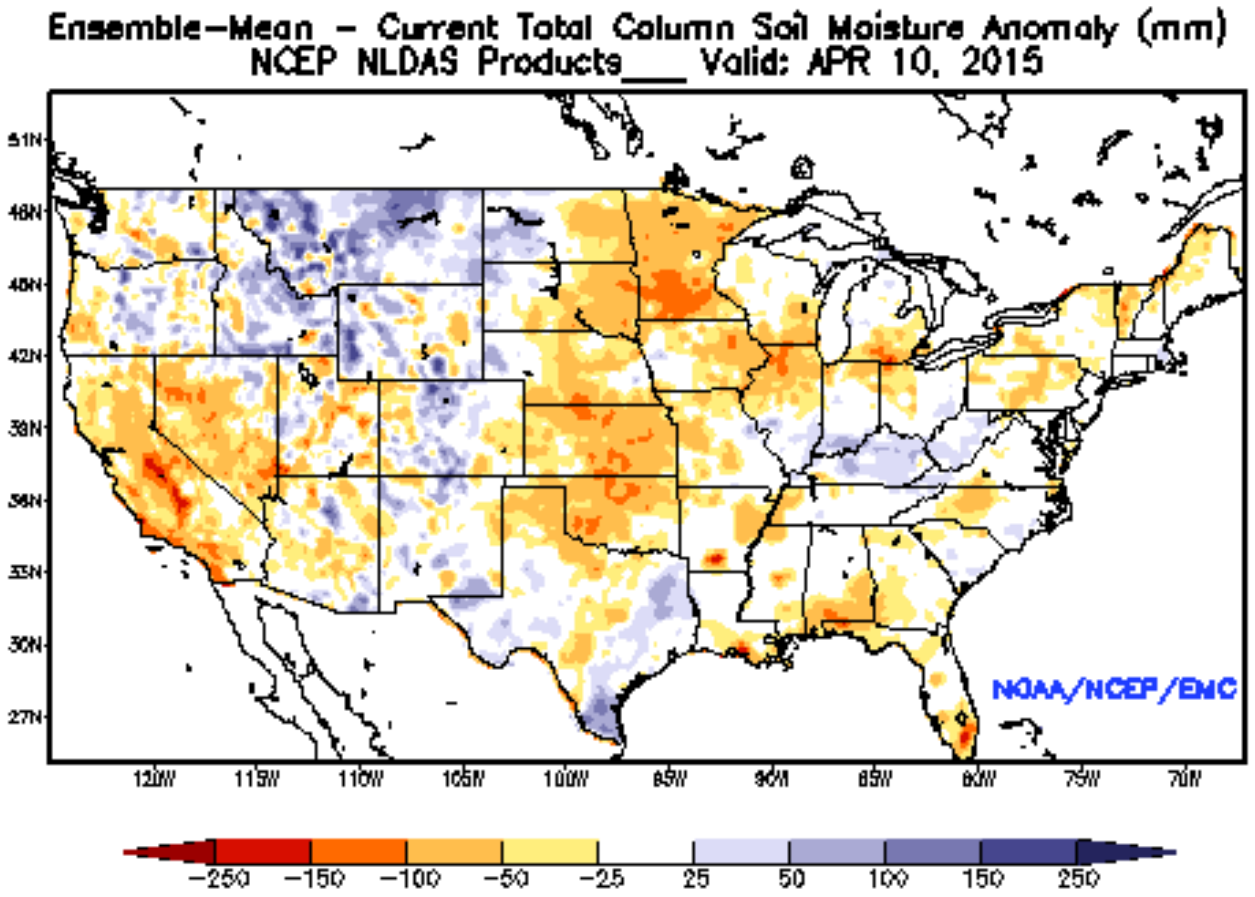
HPRCC – Regional Climate Centers

Soil Moisture

Wet area in the northern Plains deeper soil moisture

Central Corn Belt and Winter wheat belt drier

Southeast corn belt wetter



Soil Moisture Anomaly in millimeters

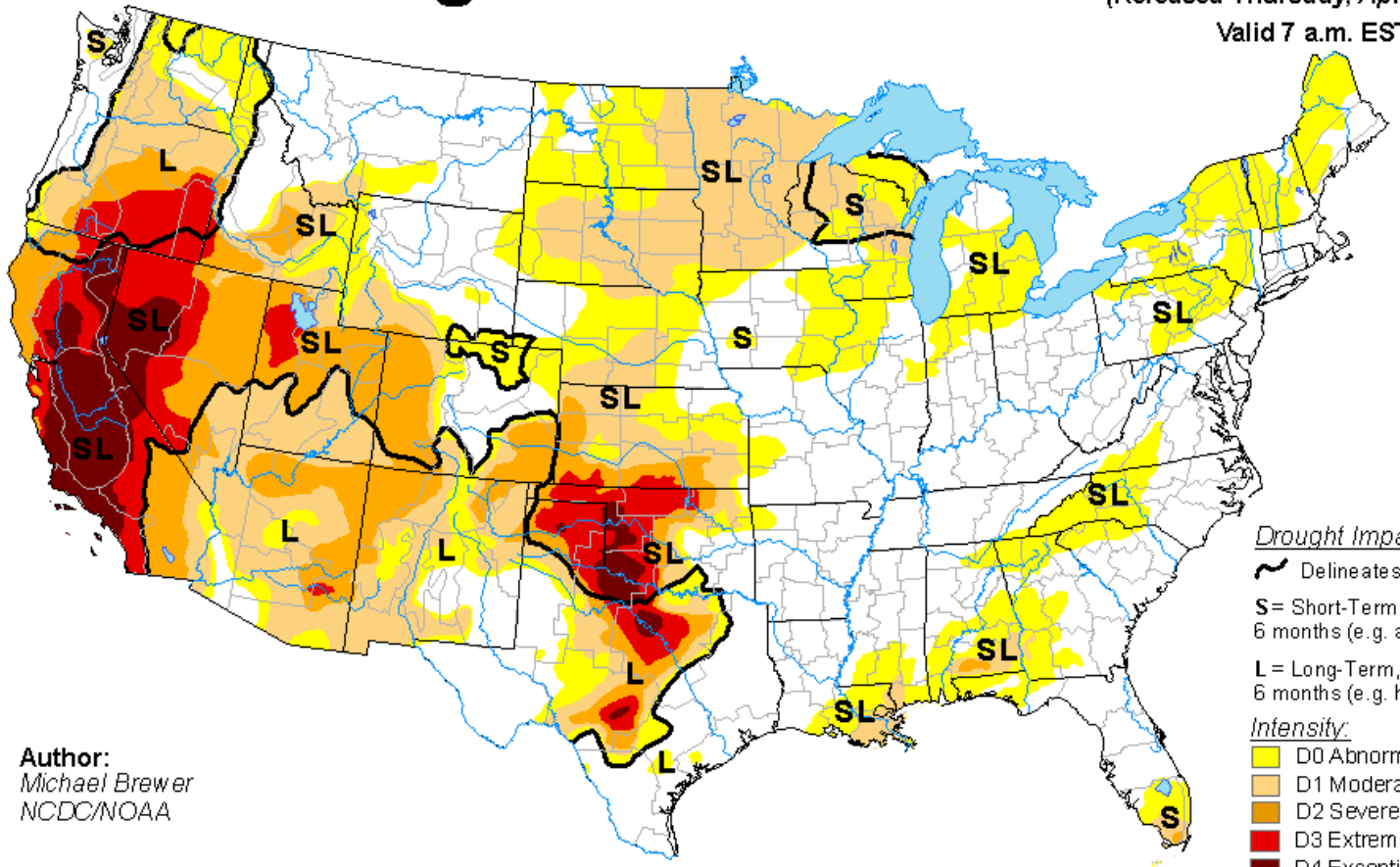
http://www.emc.ncep.noaa.gov/mmb/nldas/drought/

U.S. Drought Monitor

April 14, 2015

(Released Thursday, Apr. 16, 2015)

Valid 7 a.m. EST



Author:
Michael Brewer
NCDC/NOAA

Drought Impact Types:

Delineates dominant impacts

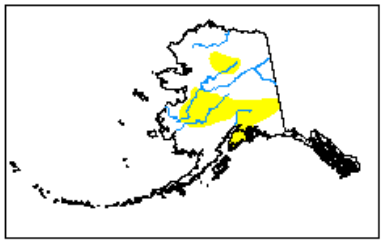
S = Short-Term, typically less than 6 months (e.g. agriculture, grasslands)

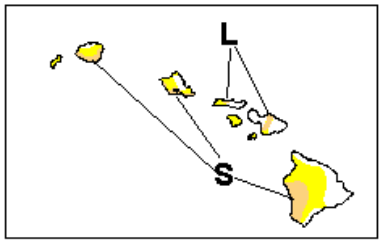
L = Long-Term, typically greater than 6 months (e.g. hydrology, ecology)

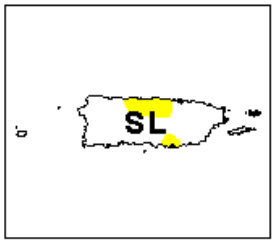
Intensity:

- 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/

Impacts

Impacts

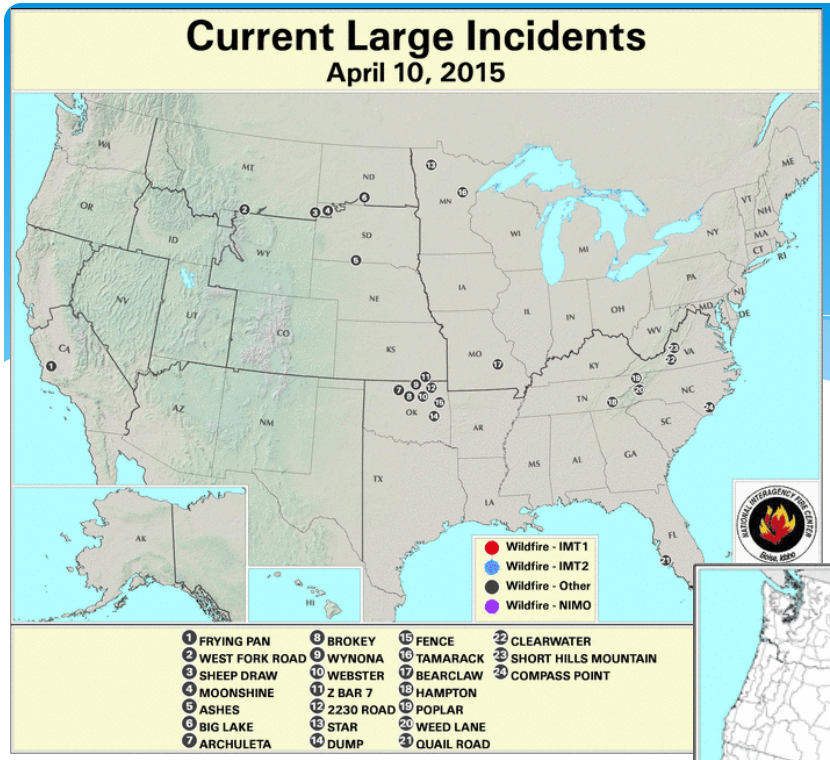
Fire

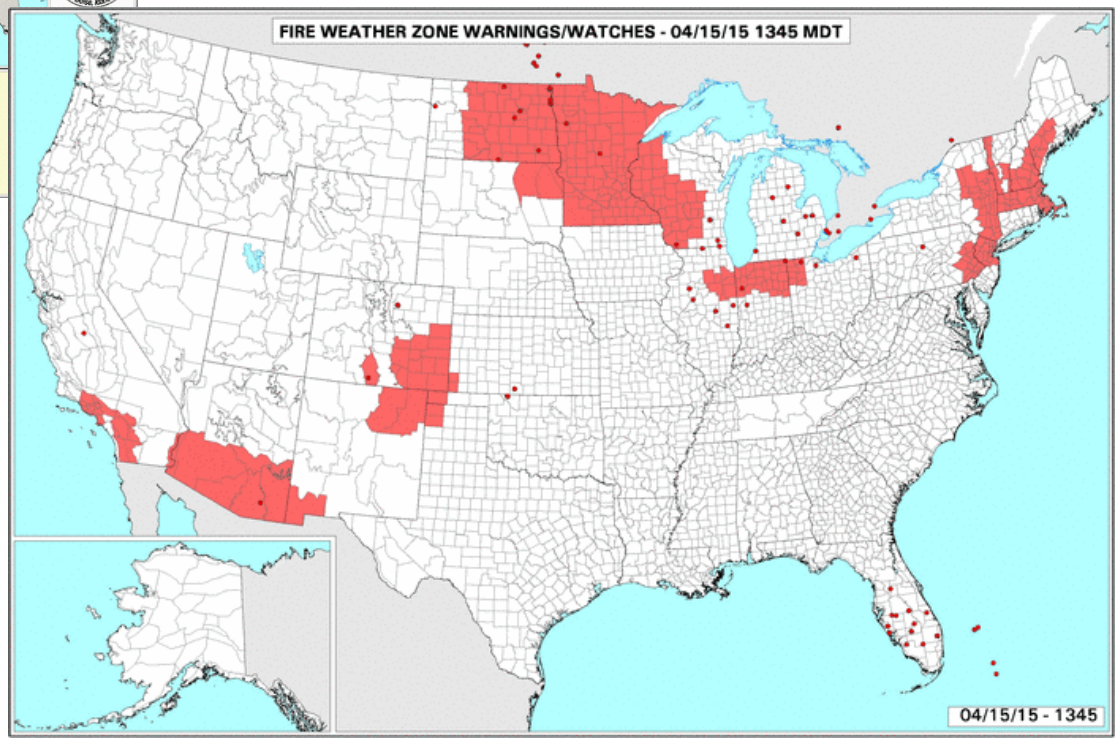
Fire Issues

* Fires not uncommon in spring
* Complicated issues – what is the problem this year?
  * Dry surfaces
  * Good growth for several years
  * Lack of snow to knock down vegetation
* Numerous red flag warnings
* Rapidly spreading/burning areas
* Part I-29 in ND closed yesterday (smoke and dust)

Fire at University of Mary Bismarck, ND – Bismarck Tribune

Fire Activity



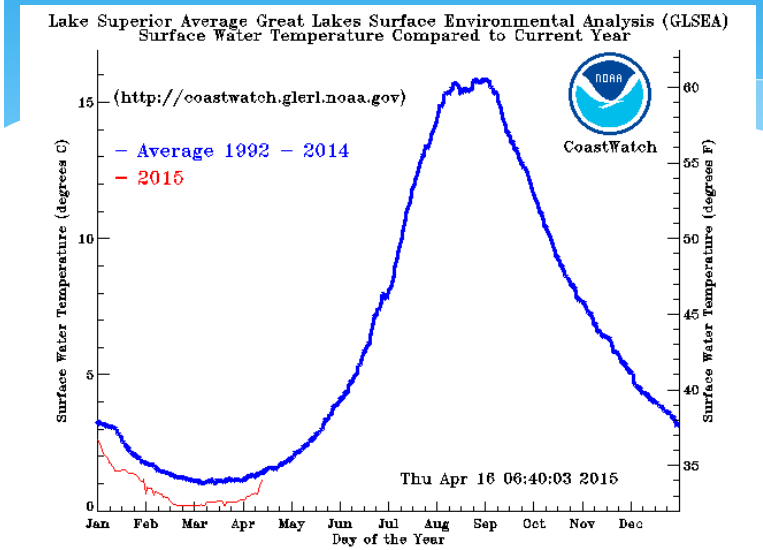


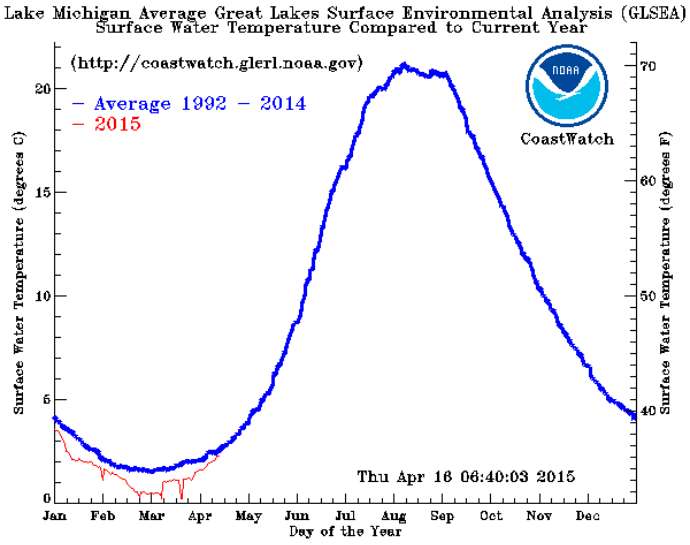
USDA Forest Service
http://activefiremaps.fs.fed.us/current.php

Impacts

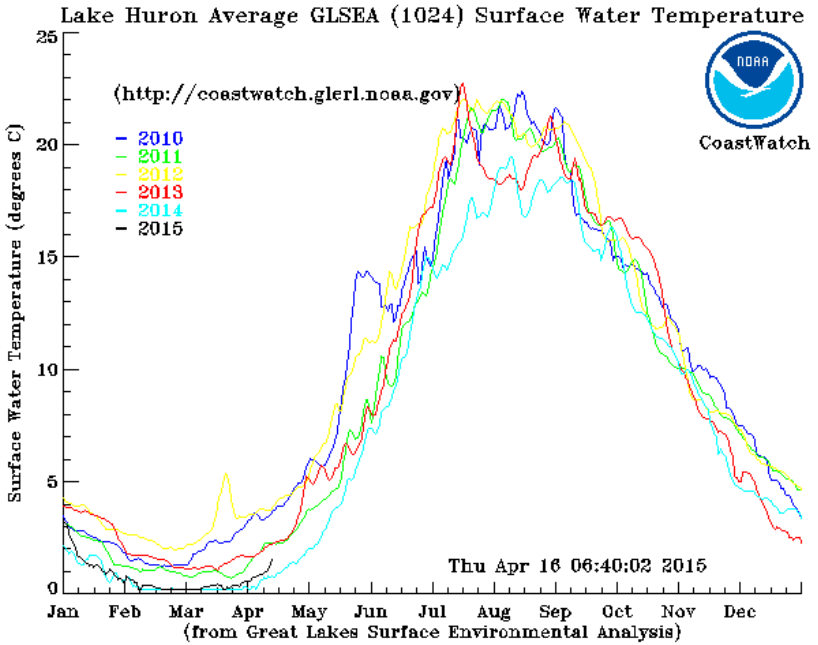
Great Lakes

Great Lakes





- 20% Ice coverage on lakes
- Somewhat above avg.
- Warmer than last year
- Will impact air temps for a period of time.
- First ships passing through

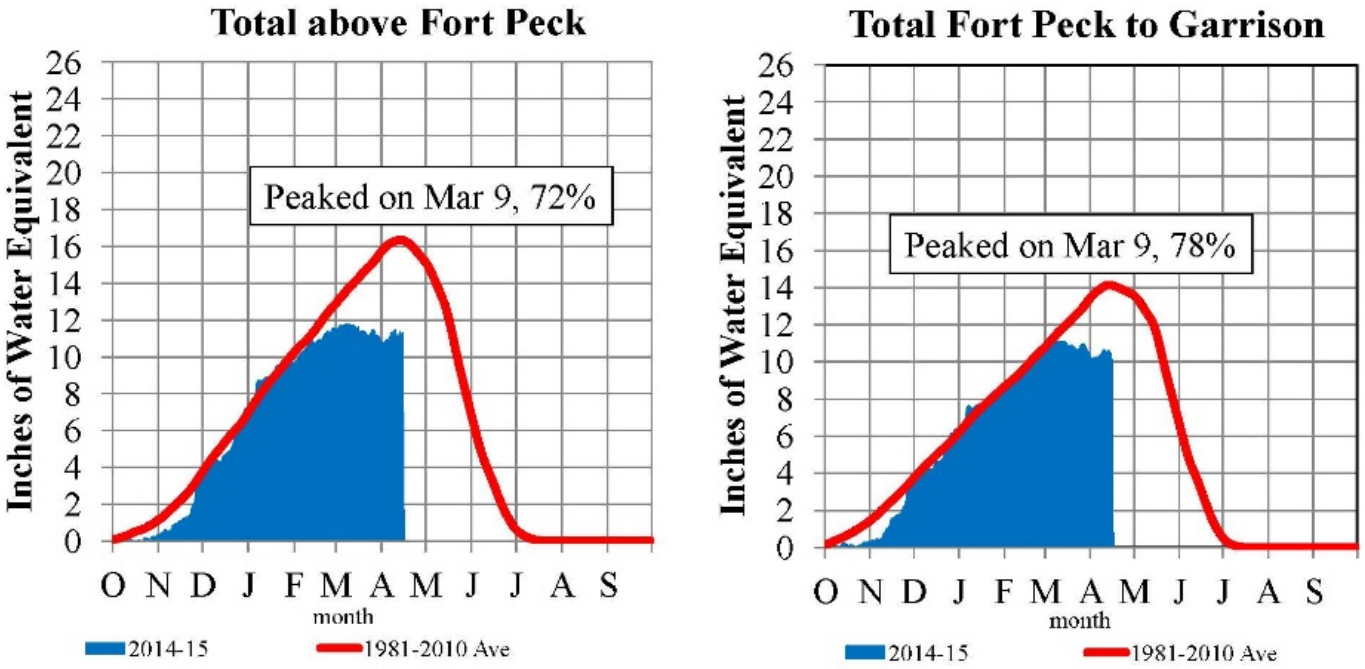


Impacts

Missouri River/Streams

Missouri River Basin – Mountain Snowpack Water Content

April 15, 2015

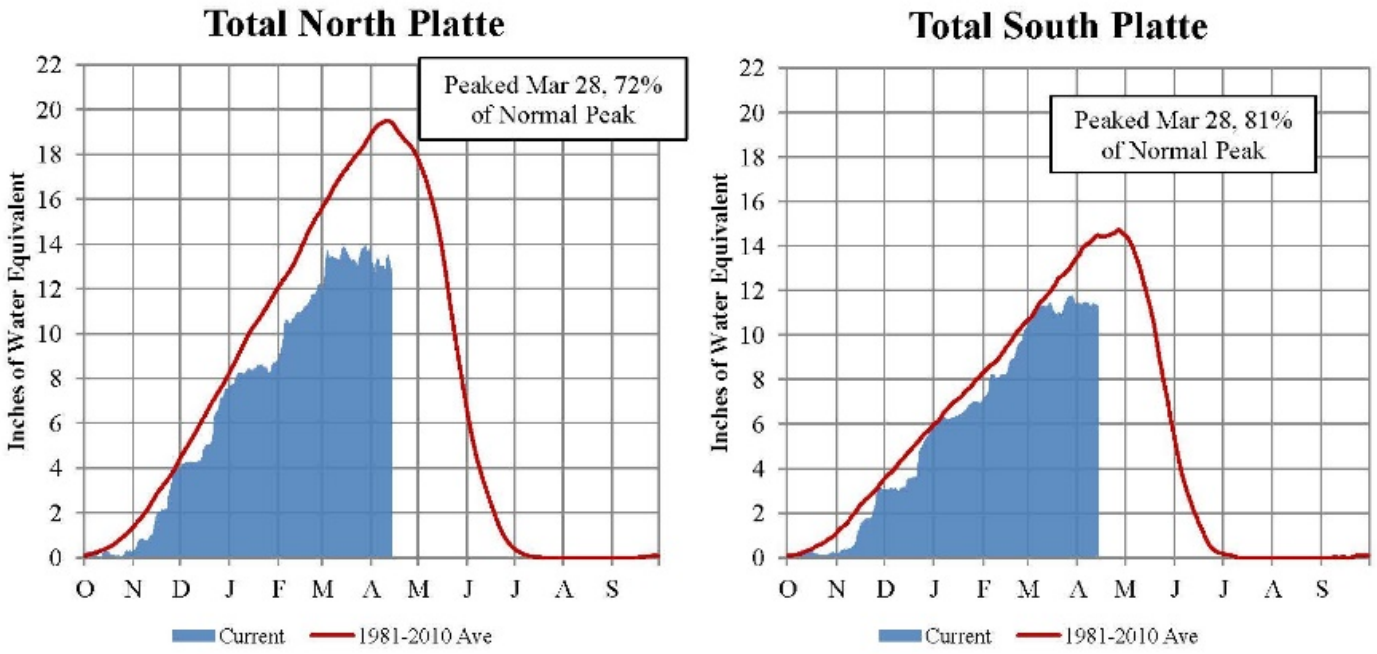


The Missouri River Basin mountain snowpack normally peaks near April 15. On April 15 the mountain snow water equivalent (SWE) in the "Total above Fort Peck" reach is currently 11.4", 70% of average. The mountain SWE in the "Total Fort Peck to Garrison" reach is currently 10.1", 72% of average. It appears the snowpack in both reaches has peaked.

Provisional data. Subject to revision.

Platte River Basin - Mountain Snowpack Water Content
Water Year 2014-2015

4/15/2015

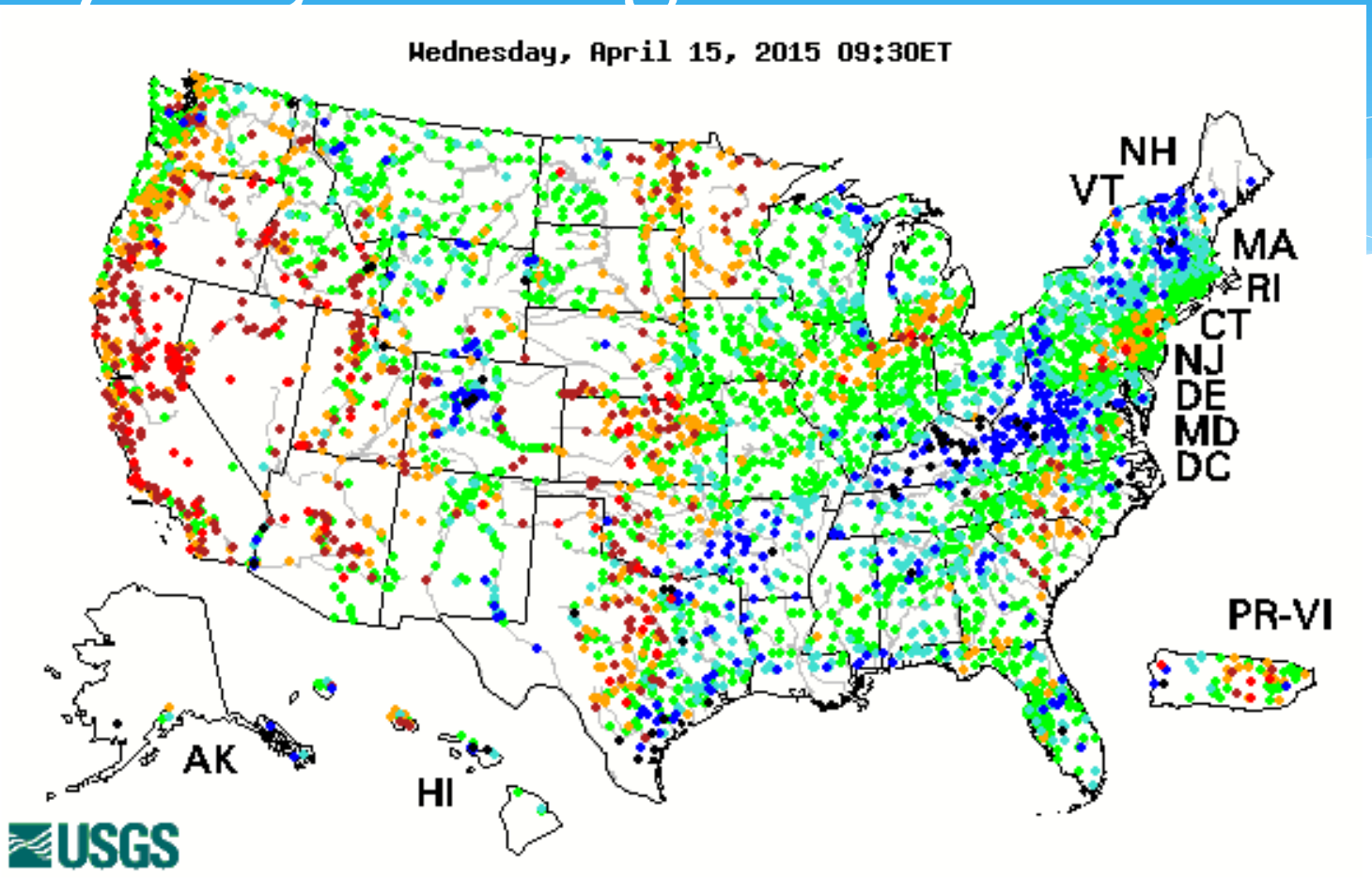


The North and South Platte River Basin mountain snowpacks normally peak near April 15. As of April 14, 2015, the mountain snowpack SWE in the "Total North Platte" reach is currently 12.6", 65% of average. The mountain snowpack SWE in the "Total South Platte" reach is currently 11.2", 77% of average.

Source: USDA, Natural Resource Conservation Service

Provisional Data. Subject to Revision

7-Day Average Streamflow



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

Wednesday, 15 Apr. 2015

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

Impacts

Wheat Belt

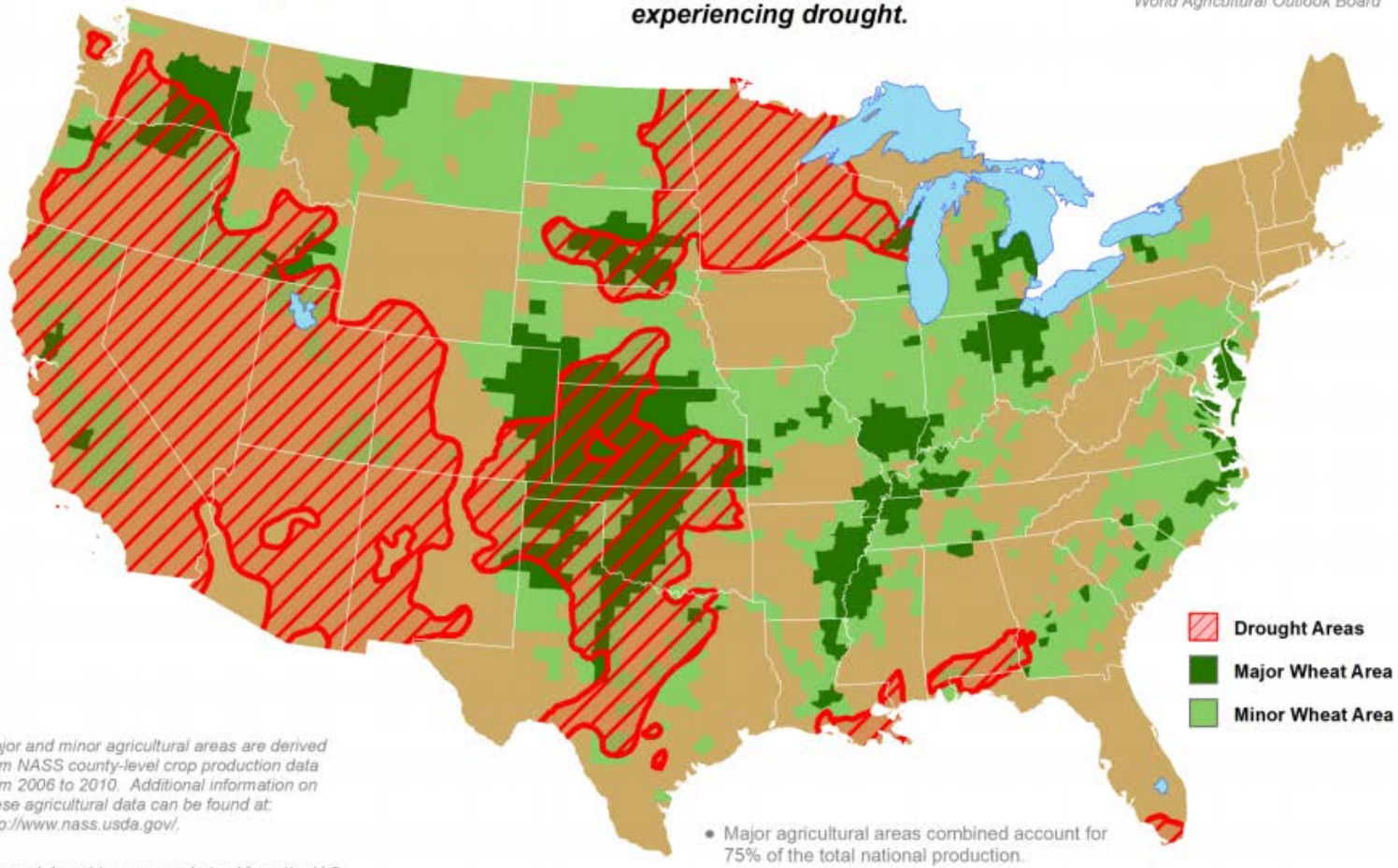
U.S. Winter Wheat Areas Experiencing Drought

USDA United States Department of Agriculture

This product was prepared by the USDA Office of the Chief Economist World Agricultural Outlook Board

Reflects April 7, 2015 U.S. Drought Monitor data

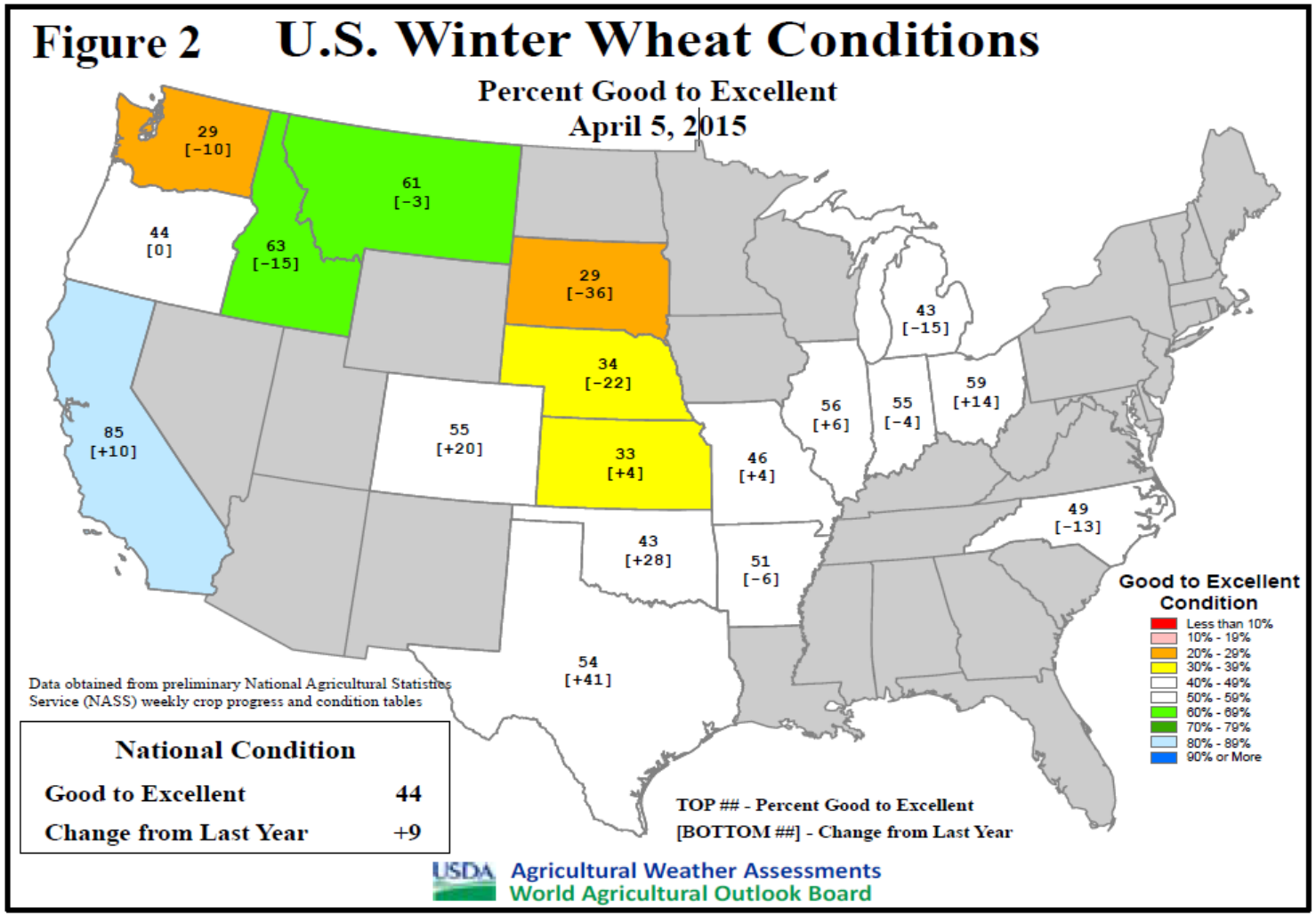
Approximately 43% of winter wheat production is within an area experiencing drought.



Major and minor agricultural areas are derived from NASS county-level crop production data from 2006 to 2010. Additional information on these agricultural data can be found at: http://www.nass.usda.gov/.

Mapped drought areas are derived from the U.S. Drought Monitor product and do not depict the intensity of drought in any particular location. More information on the Drought Monitor can be found at: http://droughtmonitor.unl.edu/.

- Major agricultural areas combined account for 75% of the total national production.
- Major and minor agricultural areas combined account for 99% of the total national production.



* April – 12 Percent Poor – Very poor
* NE – 30%, KS – 28%, SD – 27%, OK – 26%

- Multiple wheat issues
- Overall actually better than last year

Winter wheat

* Multiple issues
* Dryness from fall on – no emergence some places in SD
* Delayed planting in NE
* November cold
* Some winterkill, dormancy break
* Dry spring
* Freeze damage in KS Easter
* Varietal differences
* Yield loss, thousands of acres in SD zeroed. Other places likely, too.

Winter wheat plot Volga, SD – Emmanuel Byamukama SDSU

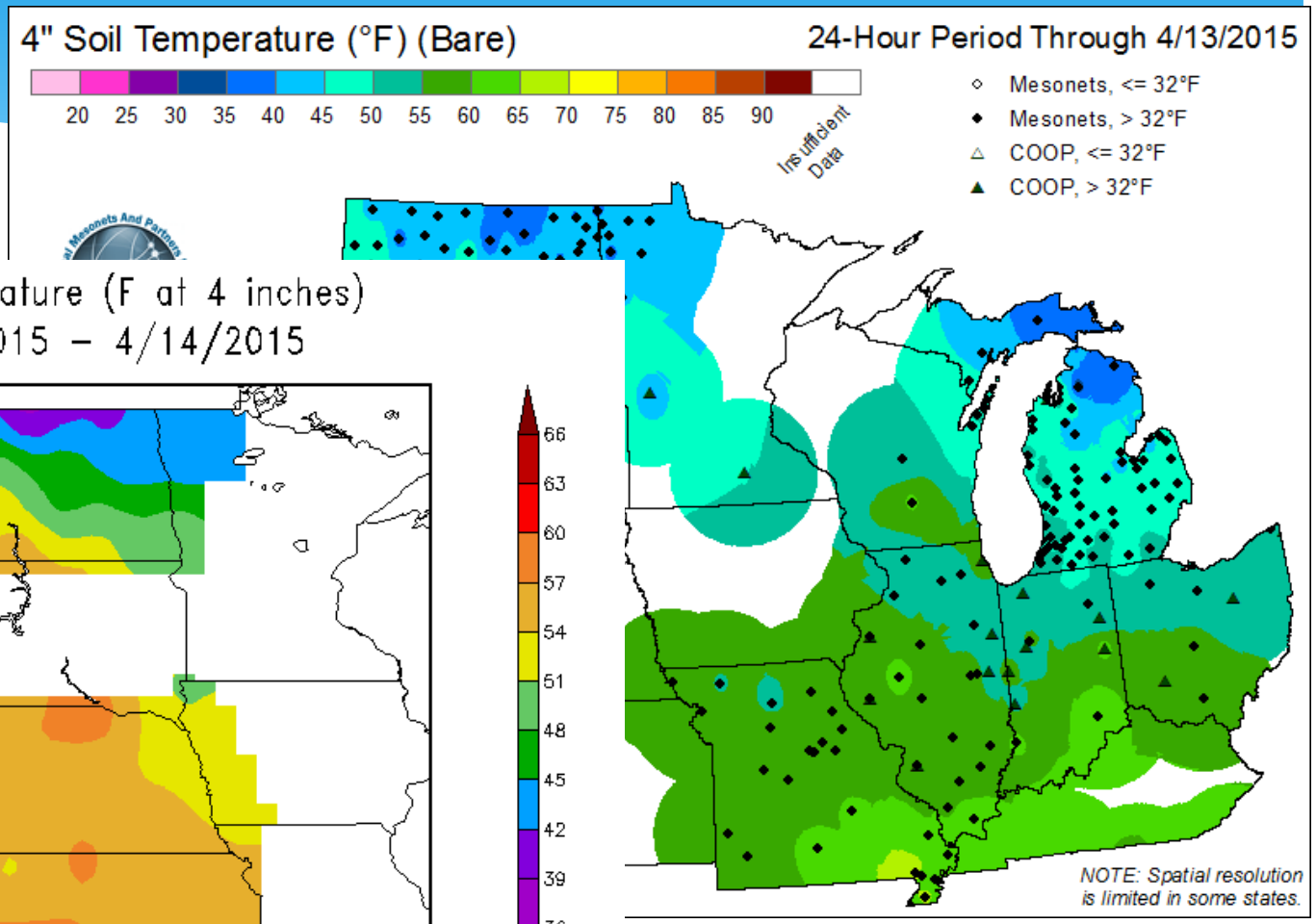
Impacts

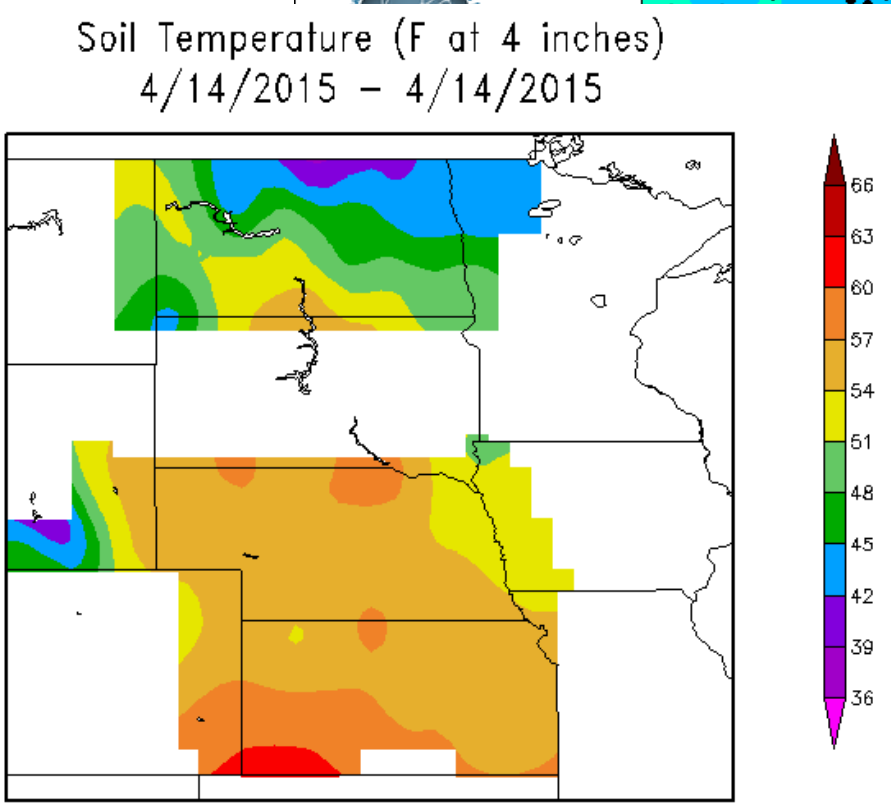
Spring Ag Activity

Midwestern Ag Issues

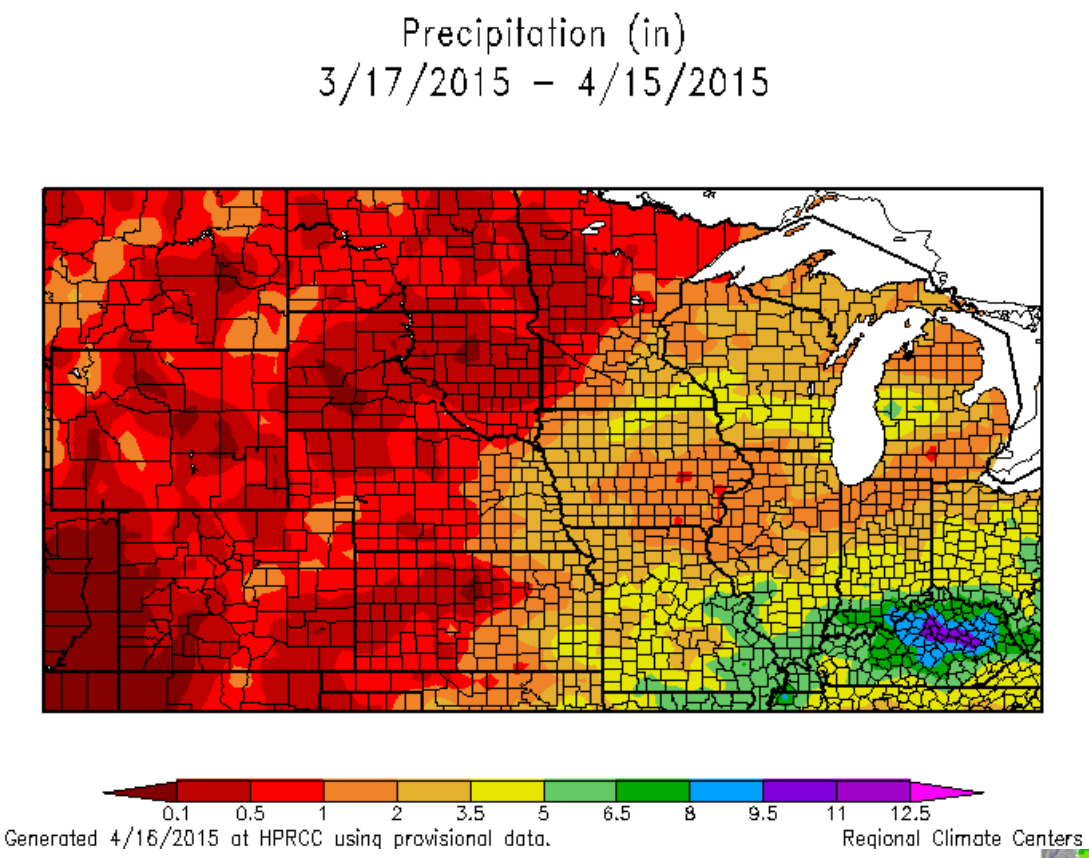
* Wetter eastern Corn Belt/dry plains northern Midwest
* Wetter areas planting activity slowed (S. IN, S. IL)
* Drier areas more activity
  * Drier soils
  * Field access
  * Earlier planting than avg. (particularly small grains, NE, SD)
  * Earlier field work (fertilizer, etc.)
* Some winter kill specialty crops in Michigan (peach, blueberry and vinifera-grape)
* Corn planting 2% - 5% avg.

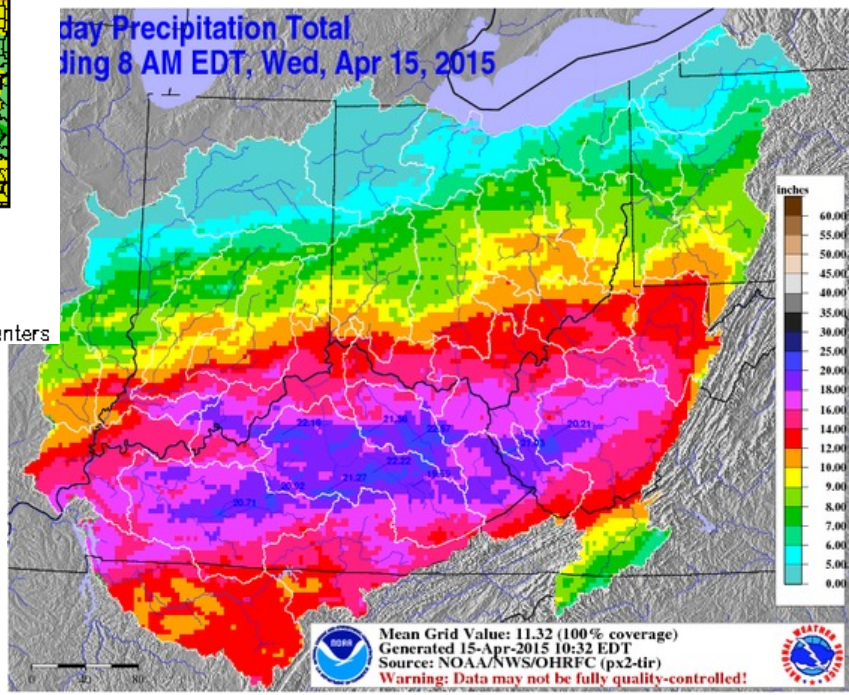
Soil temperatures





Last 30-60 day precipitation





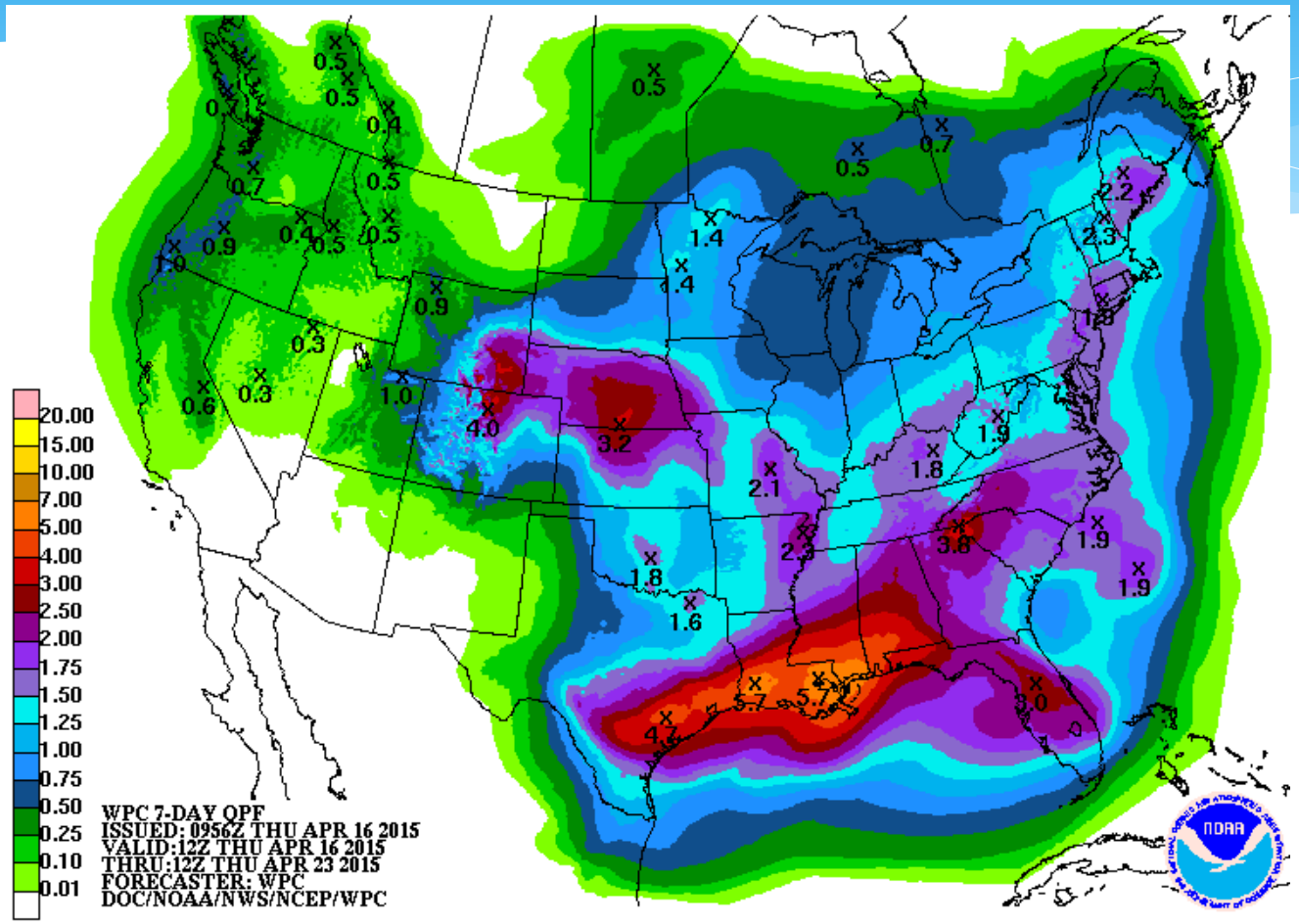
Outlooks

Climate Outlooks

* 7-day precipitation forecast
* 8-14 day outlook
* May
* 3 Months (May-July)
* Seasonal Drought Outlooks
* El Nino

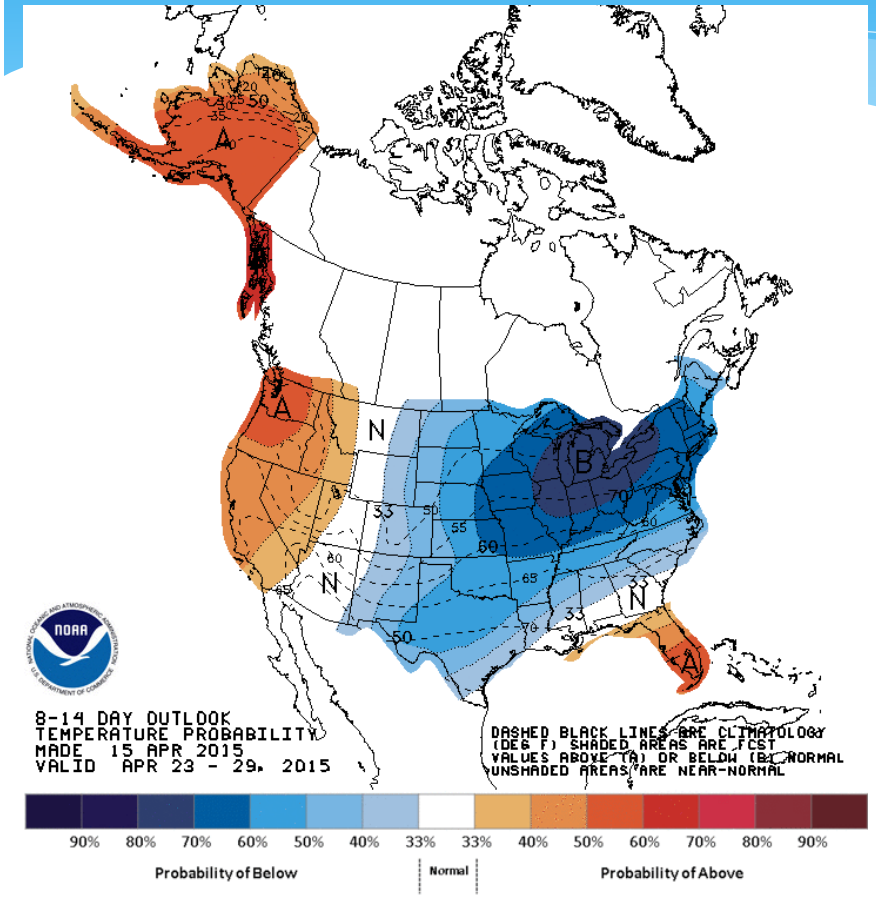
7-day Quantitative Precipitation Forecast

Valid: 7 AM Thu 16 Apr– 7 AM Thu 23 Apr

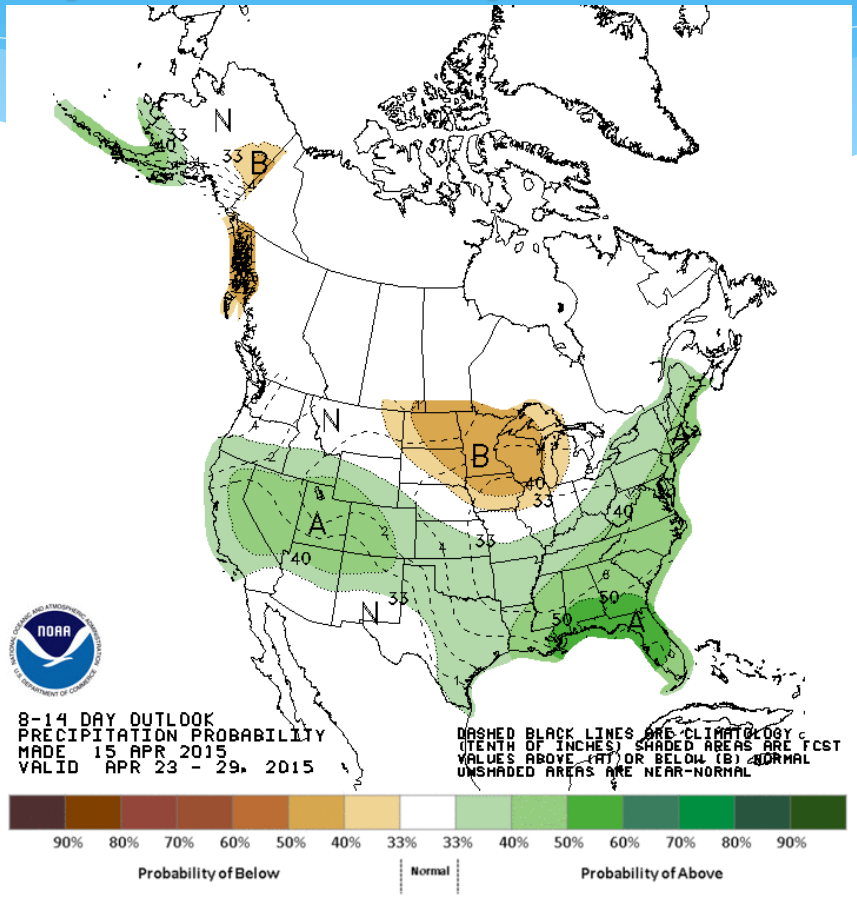


http://www.wpc.ncep.noaa.gov/qpf/day1-7.shtml

Temperature and Precipitation Probabilities for 24 Apr. – 30 Apr. 2014



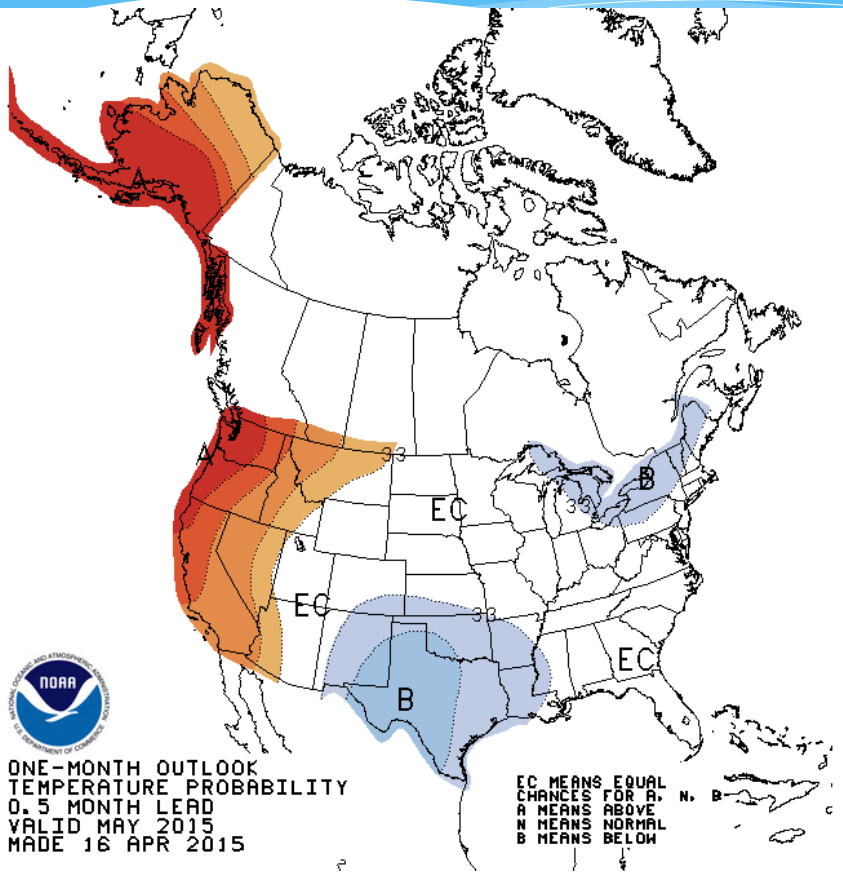
Temperature



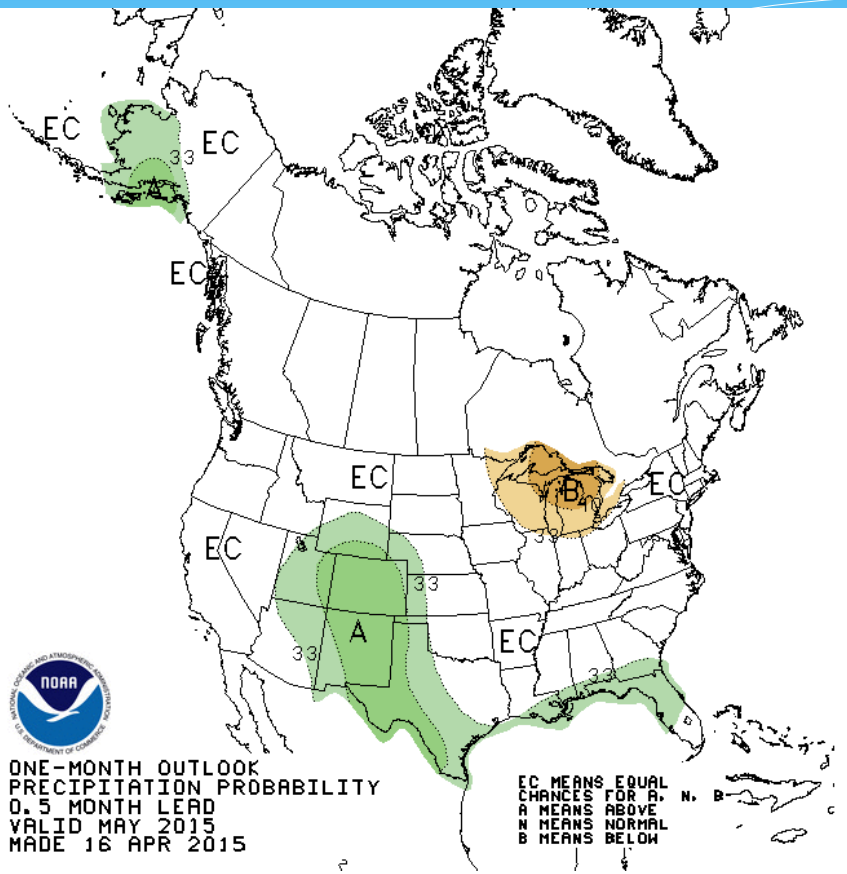
Precipitation

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

May Temperature and Precipitation Probabilities



Temperature

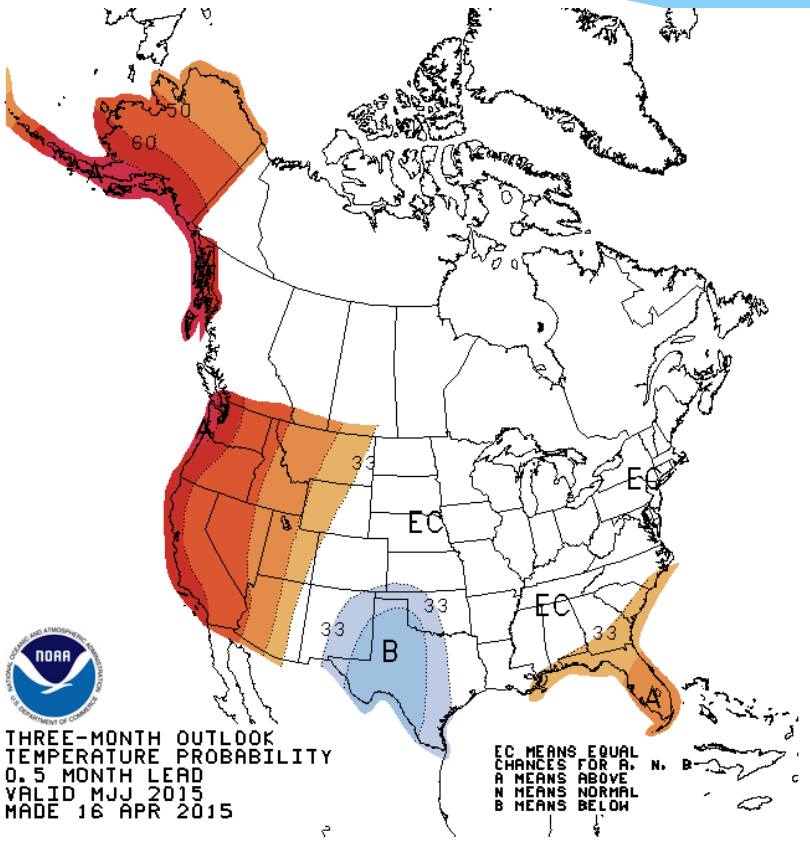


Precipitation

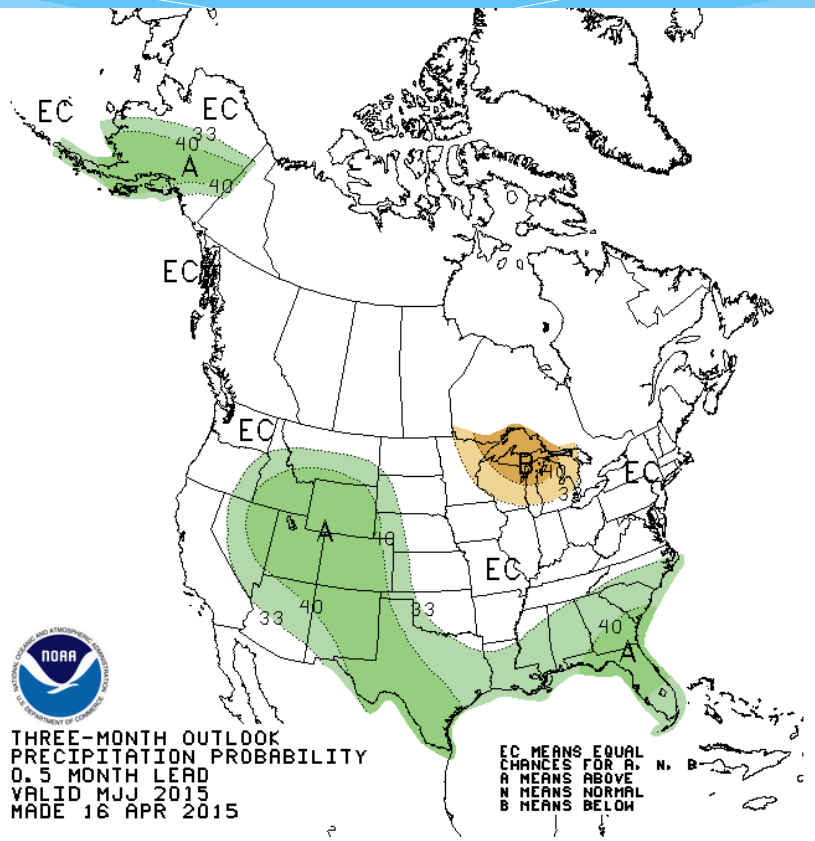
http://www.cpc.ncep.noaa.gov/products/predictions/30day/

3 Month Temperature and Precipitation Probabilities

(May – July)



Temperature

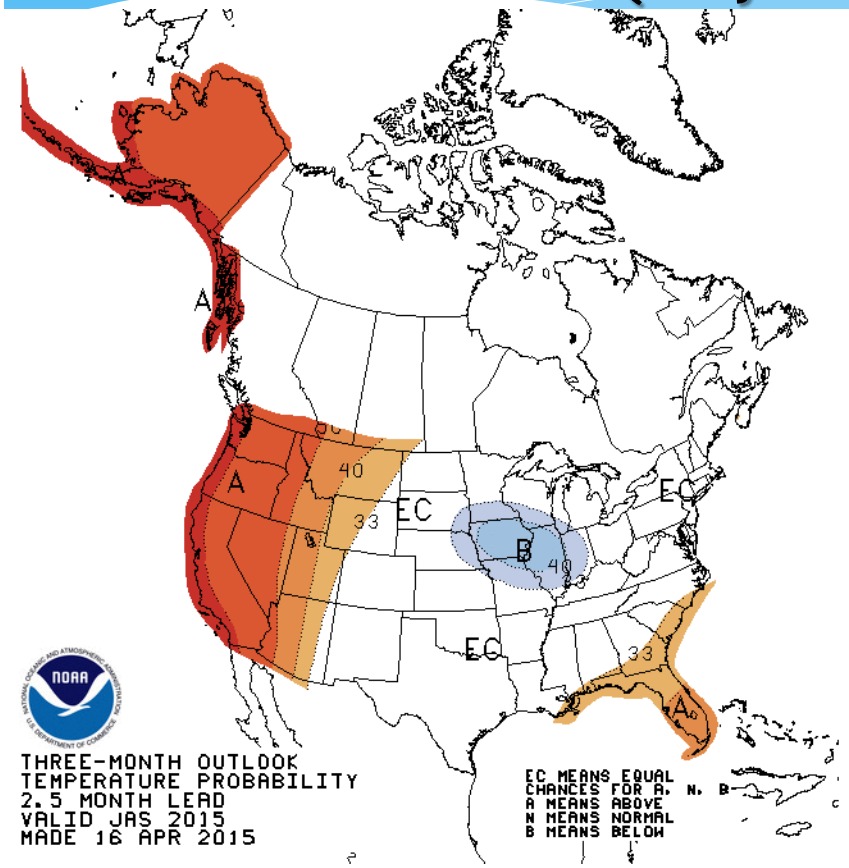


Precipitation

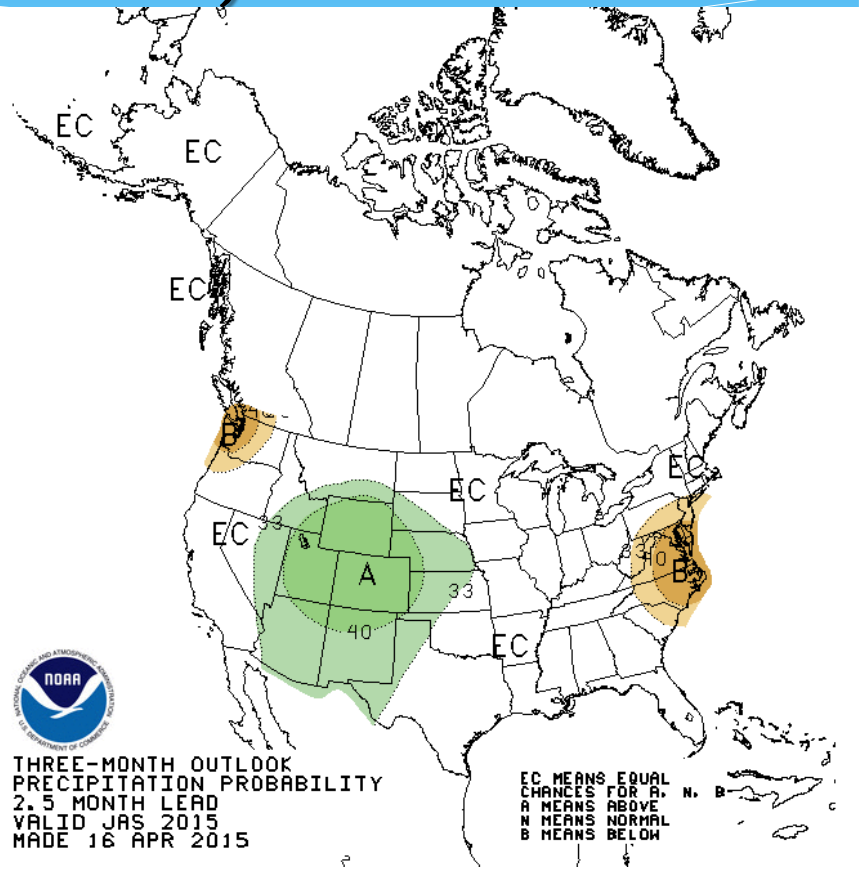
http://www.cpc.ncep.noaa.gov/products/predictions/long_range/seasonal.php?lead=1

3 Month Temperature and Precipitation Probabilities

(July – September)



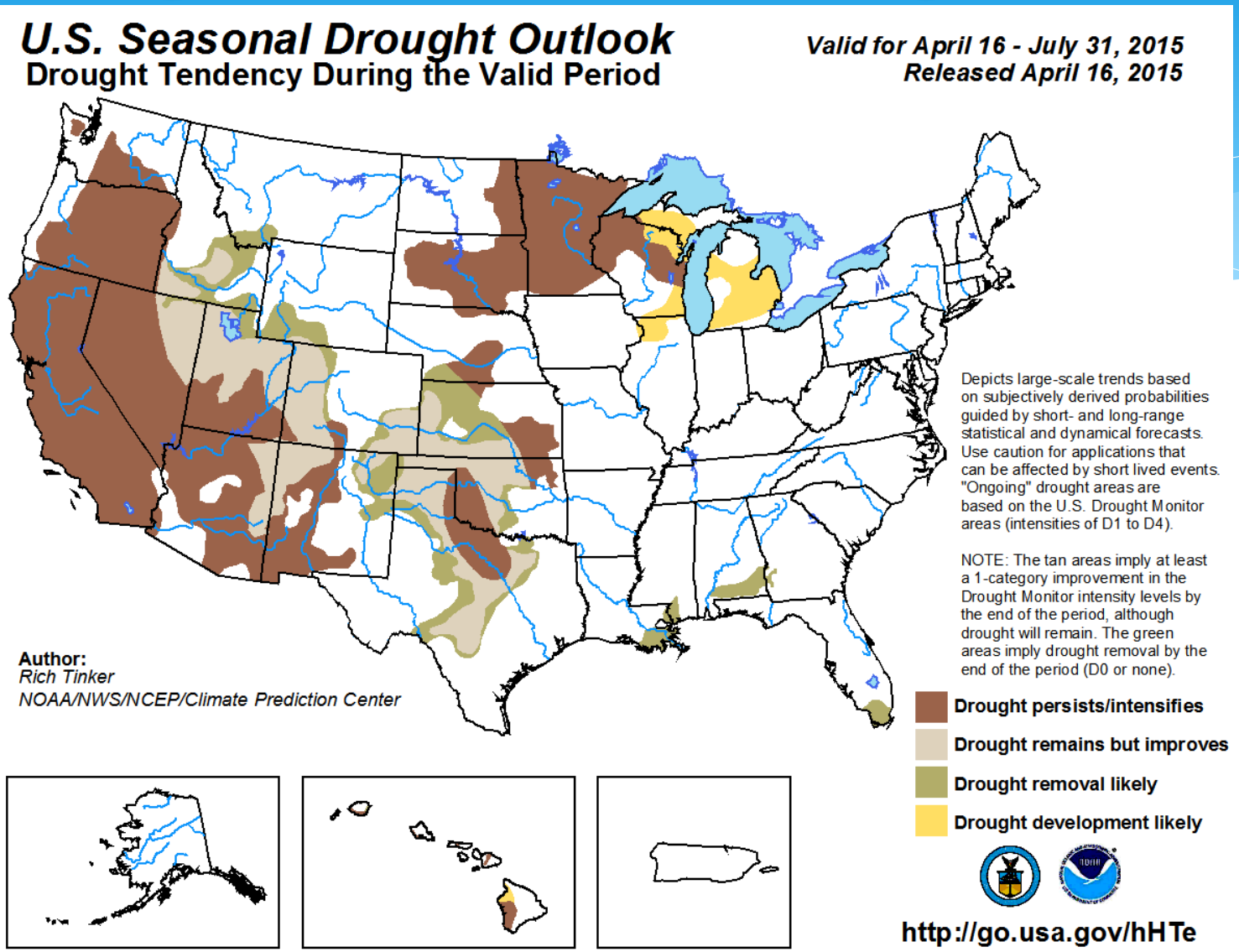
Temperature



Precipitation

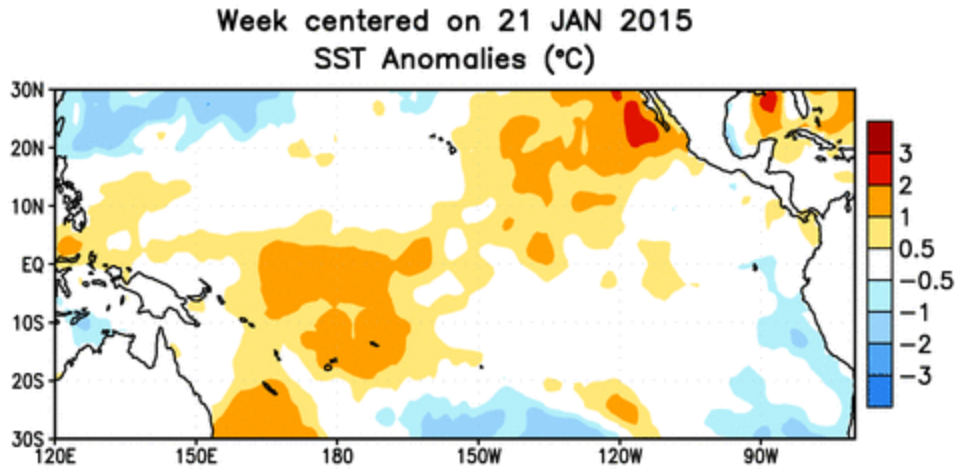
http://www.cpc.ncep.noaa.gov/products/predictions/long_range/seasonal.php?lead=1

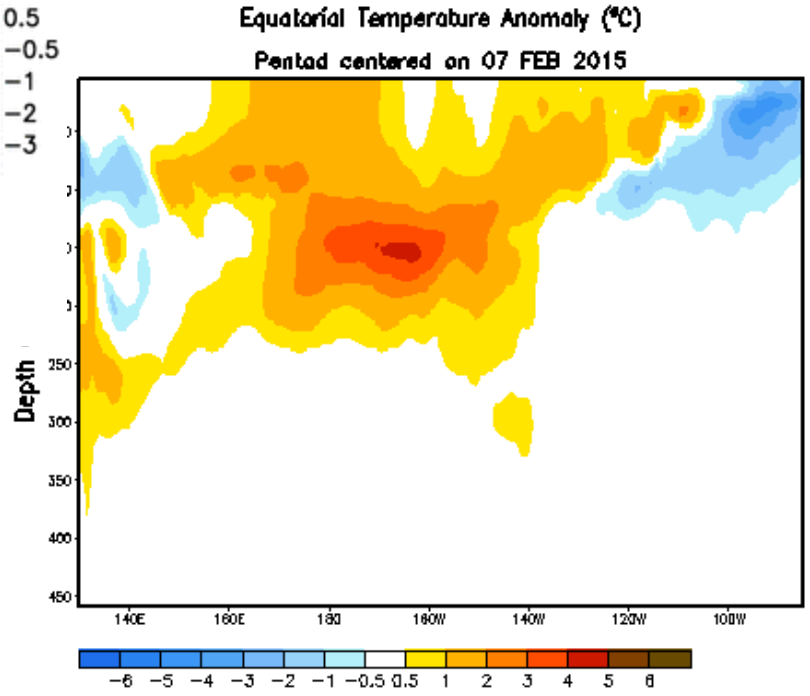
Drought Outlook through 31 July



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

Warm water progression in Pacific





ENSO Alert System Status: El Niño Advisory

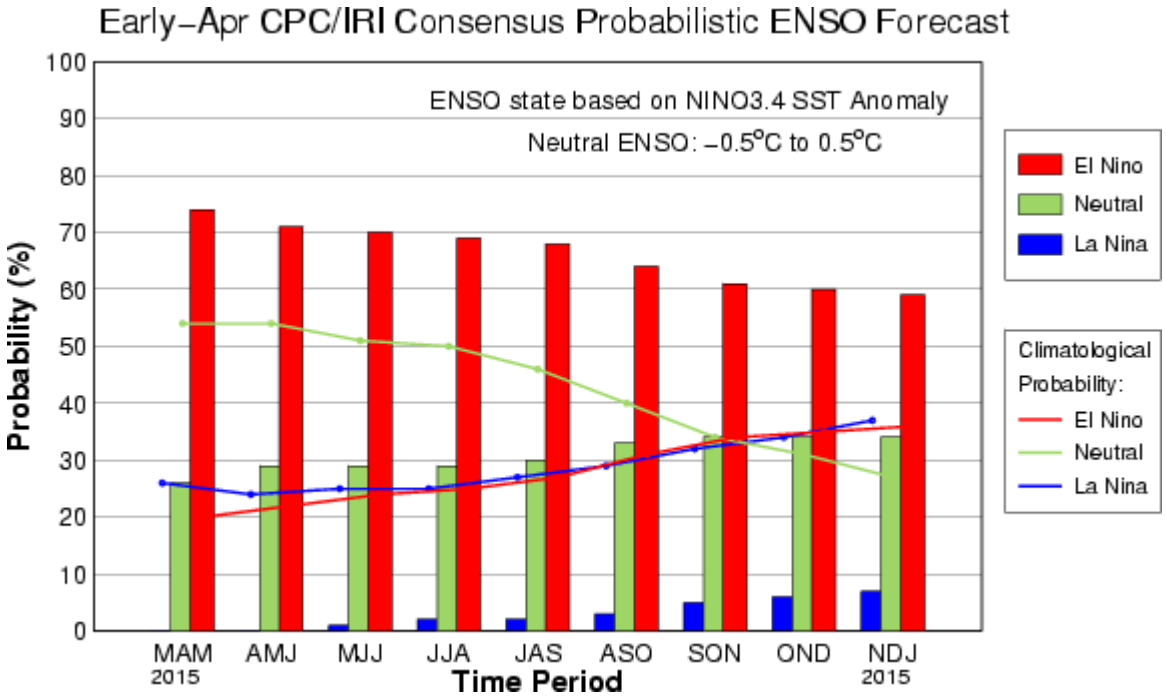
Large amount of warm water sub-surface
Likely to continue.

CPC – Atmosphere acting like El Nino now

CPC/IRI Probabilistic ENSO Outlook

Updated: 9 April 2015

The chance of El Niño is approximately 60-70% through 2015.



Summary - Conditions

* Mostly warmer (except MI) recently
* Generally drier conditions west/north - wetter (S. IL, IN, KY)
* Soil temperature generally good
* Soil moisture dry – surface particular except (S. IL, IN, KY)

* Winter wheat better than last year still losses
* Early progress on small grains
* Corn a little slower than expected progress – getting ready to roll

Summary - Outlooks

* El Nino – advisory. Impacts summer outlook
* Temps warmer likely far west, cooler late summer IA-IL
* Wetter conditions likely most of plains – equal chances elsewhere – dry Great Lakes
* Drought conditions will likely slightly worsen over plains before evening out or improving
* Begin improving central plains – develop in Great Lakes
* Limited spring flood potential west – convective only. Still some potential in the east
* Missouri River inflows dropping

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:**
  * Dennis Todey: dennis.todey@sdstate.edu , 605-688-5141
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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