Missouri Basin Climate Outlook
4 April 2014

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4 April, 2014
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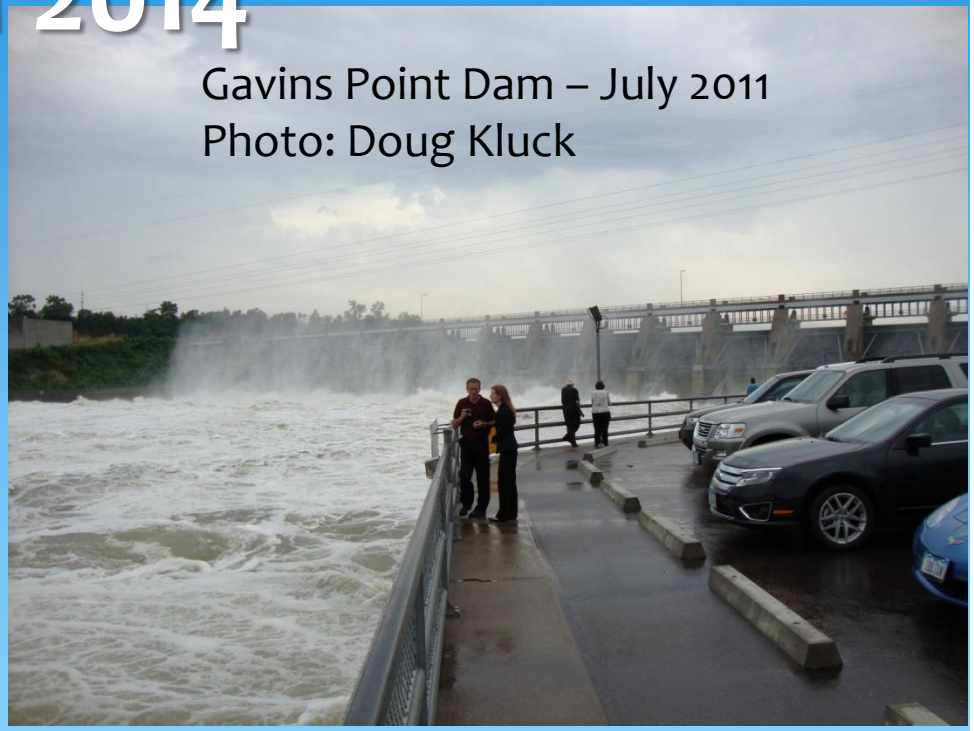


Gavins Point Dam – July 2011
Photo: Doug Kluck

National Drought Mitigation Center

NOAA National Oceanic and Atmospheric Administration U.S. Department of Commerce

Regional Climate Centers

AASC American Association of State Climatologists

U.S. Department of the Interior Bureau of Reclamation
RECLAMATION
Managing Water in the West

US Army Corps of Engineers
Northwestern Division
Missouri River Basin Water Management Division
BUILDING STRONG®

General Information

* **Providing climate services to the Missouri Basin**
  * NOAA-NWS, MRBRC, USACE, BOR, NRCS, regional and state climatologists and other partners

* **Next Climate Outlook**
  * April 17th 2014, next regular Webinar

* **Access to previous Missouri Basin 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*
* Operator Assistance for questions at the end.

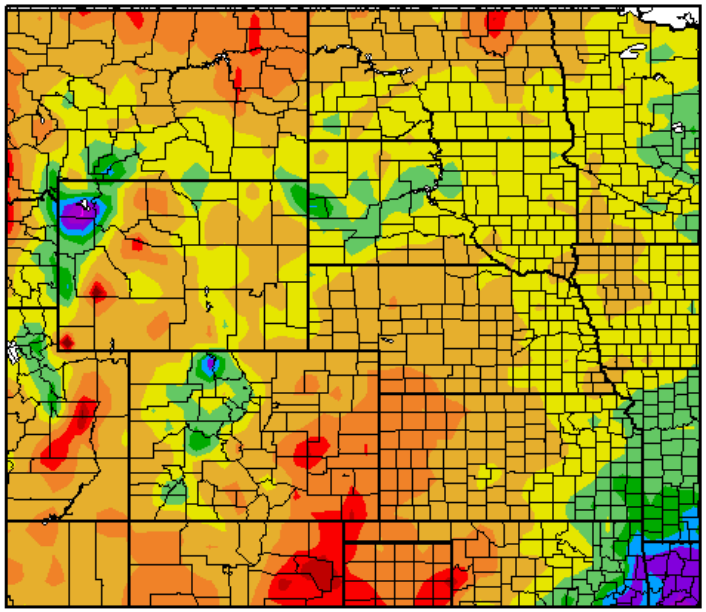
Agenda

* **Current conditions & comparisons**
* **River review status**
* **Predictions**
* **Drought/El Nino**

Key Points

* **Current Conditions**
  * Large mountain snow packs. Less so in plains
  * Some frozen soils in plains/some moist
  * Temps still cooler than average
* **Predictions**
  * Likely cooler still into the spring.
  * Precipitation outlooks – equal chances
  * No indications of specific large events
  * El Nino likely coming – little impact on current situation
  * Some minor tributary flooding expected
* **Caveat**
  * Near point of peak accumulation – extreme individual events difficult to forecast

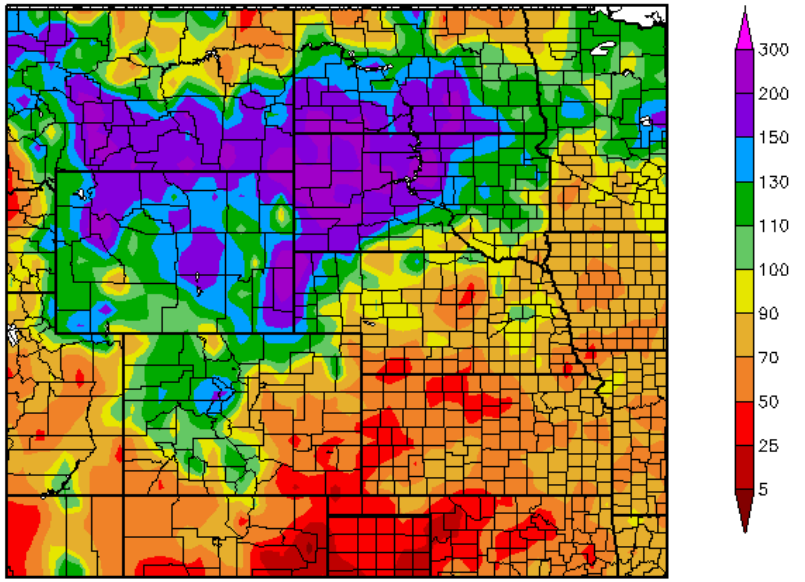
Precipitation (in)
10/3/2013 – 4/2/2014



Generated 4/3/2014 at HPRCC using provisional data.

Regional Climate Centers

Percent of Normal Precipitation (%)
10/3/2013 – 4/2/2014



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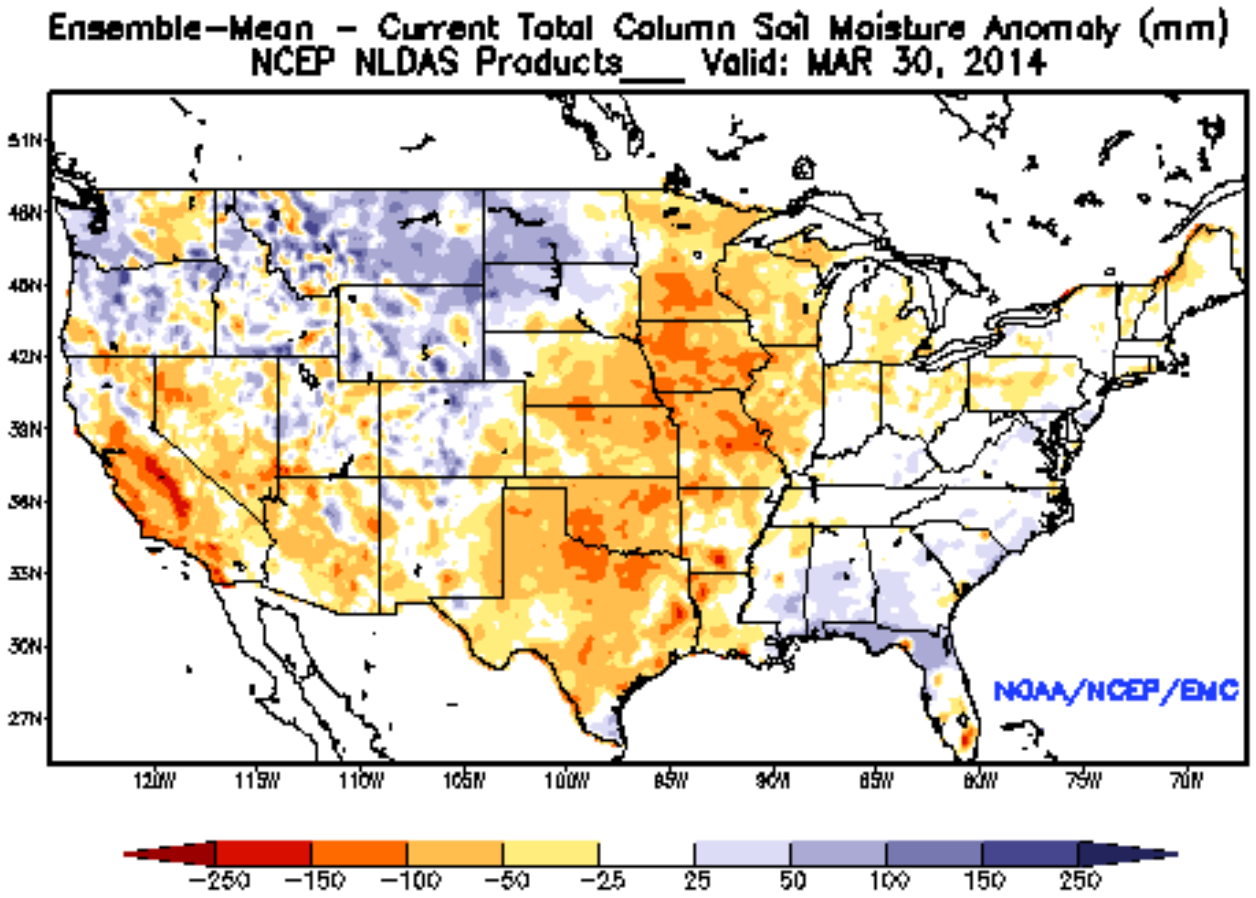
Regional Climate Centers

http://www.hprcc.unl.edu

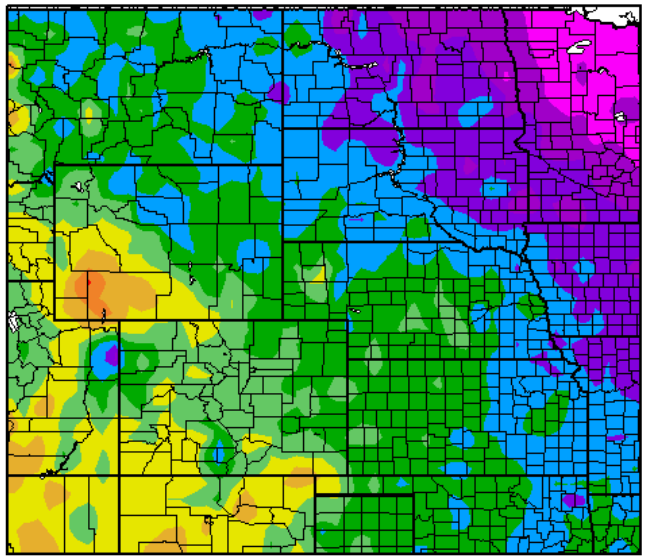
Soil Moisture



Still area of biggest need and lack of detail

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

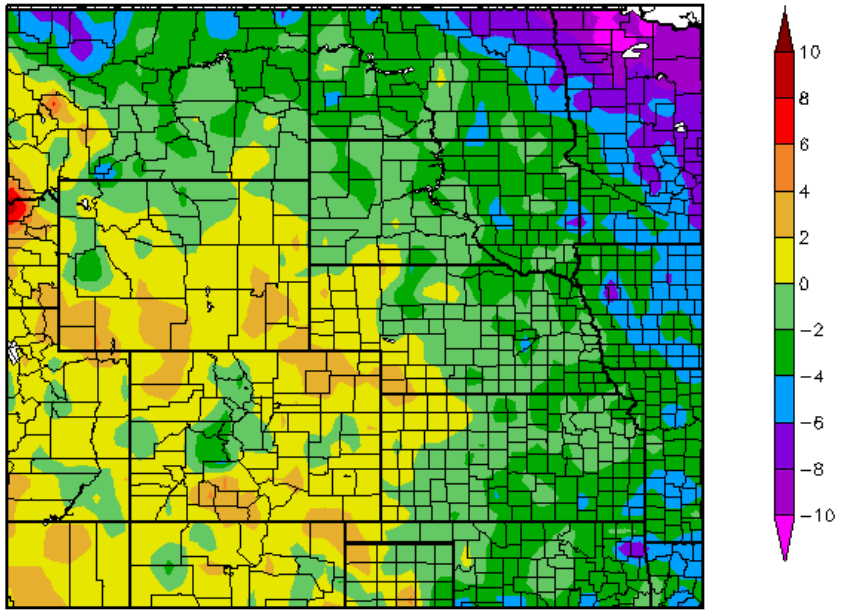
Departure from Normal Temperature (F)
12/1/2013 – 2/28/2014



Generated 3/11/2014 at HPRCC using provisional data.

Regional Climate Centers

Departure from Normal Temperature (F)
3/4/2014 – 4/2/2014

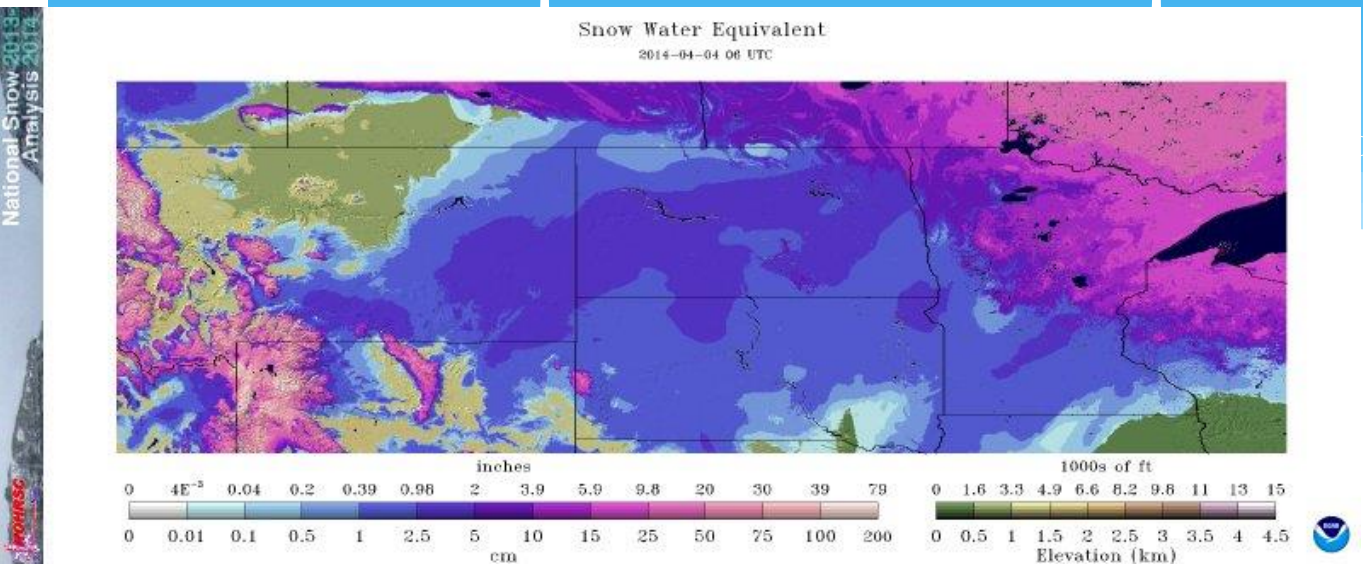


Generated 4/3/2014 at HPRCC using provisional data.

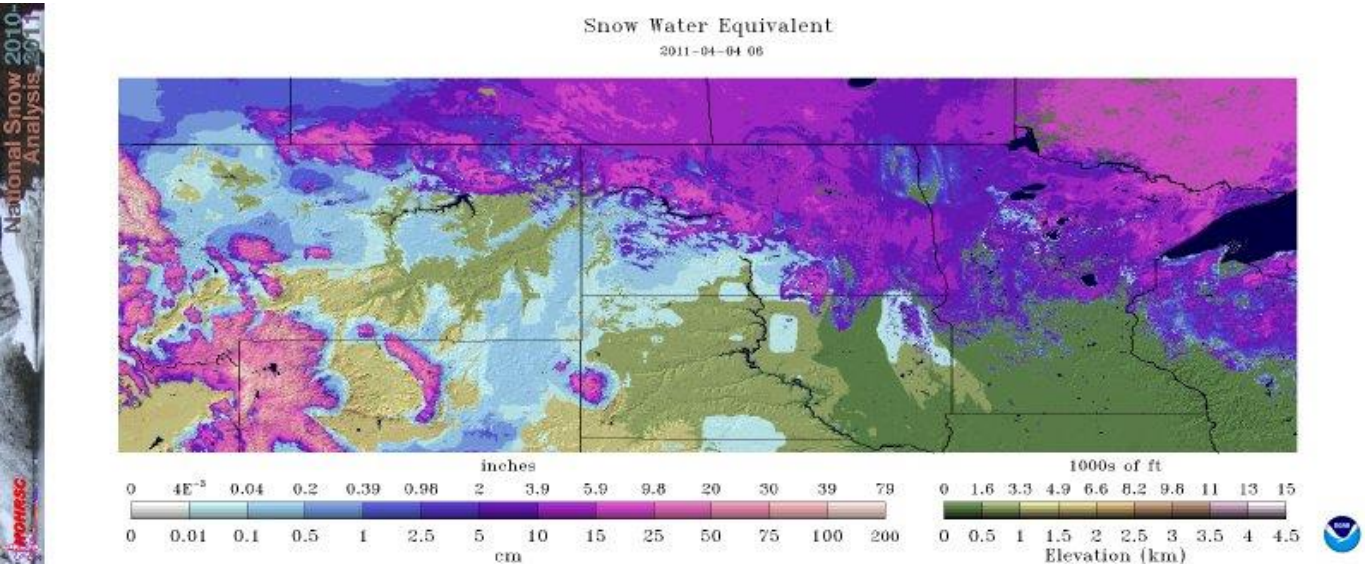
Regional Climate Centers

http://www.hprcc.unl.edu

Northern Basin Snow Water Equivalent Comparison



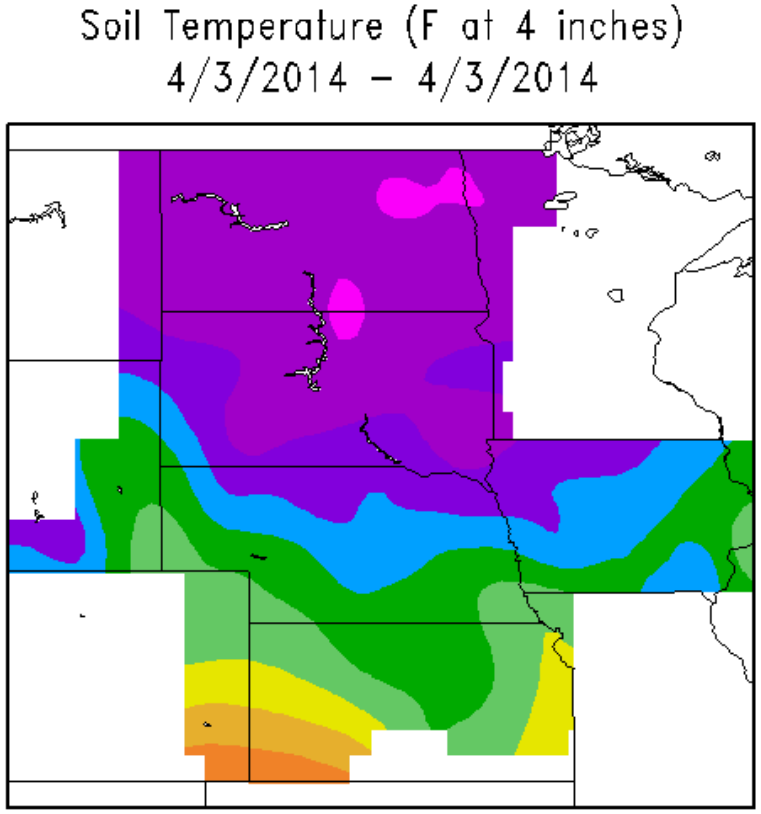
4 April 2014

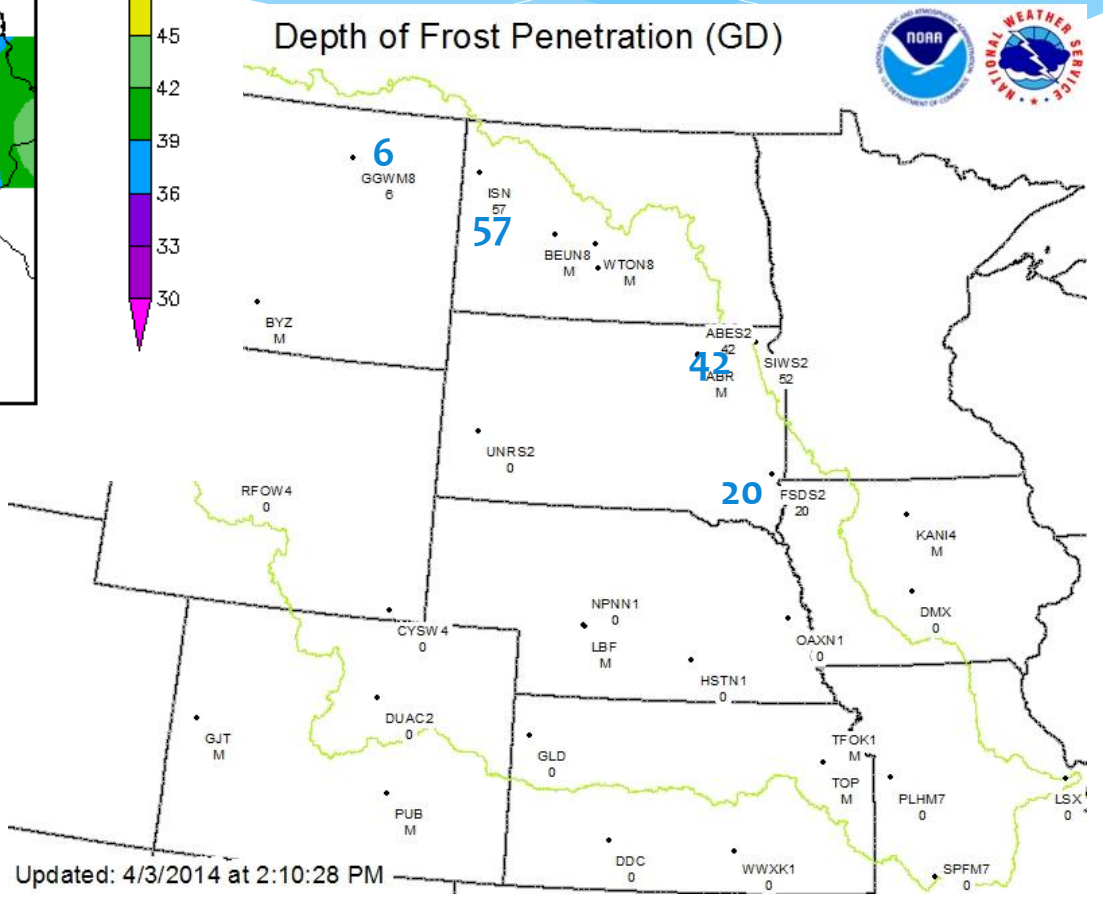


4 April 2011

http://www.nohrsc.noaa.gov

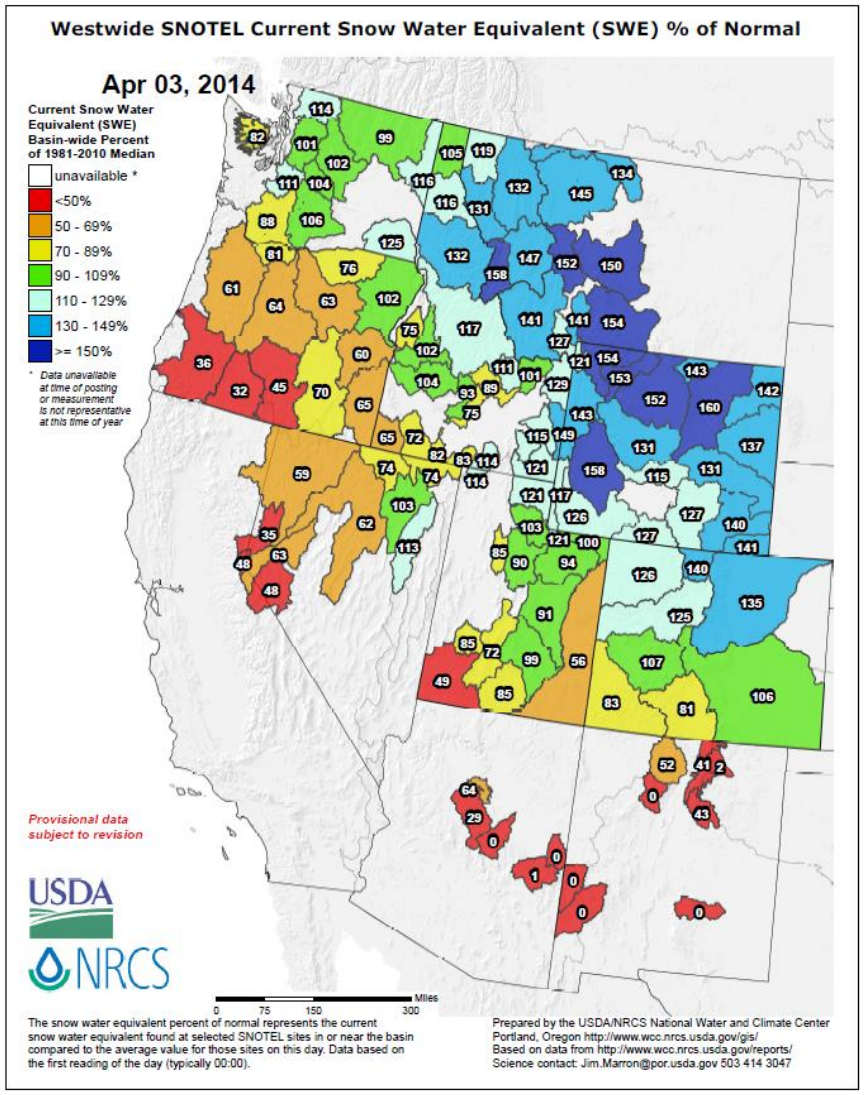
Soil temperature/frost

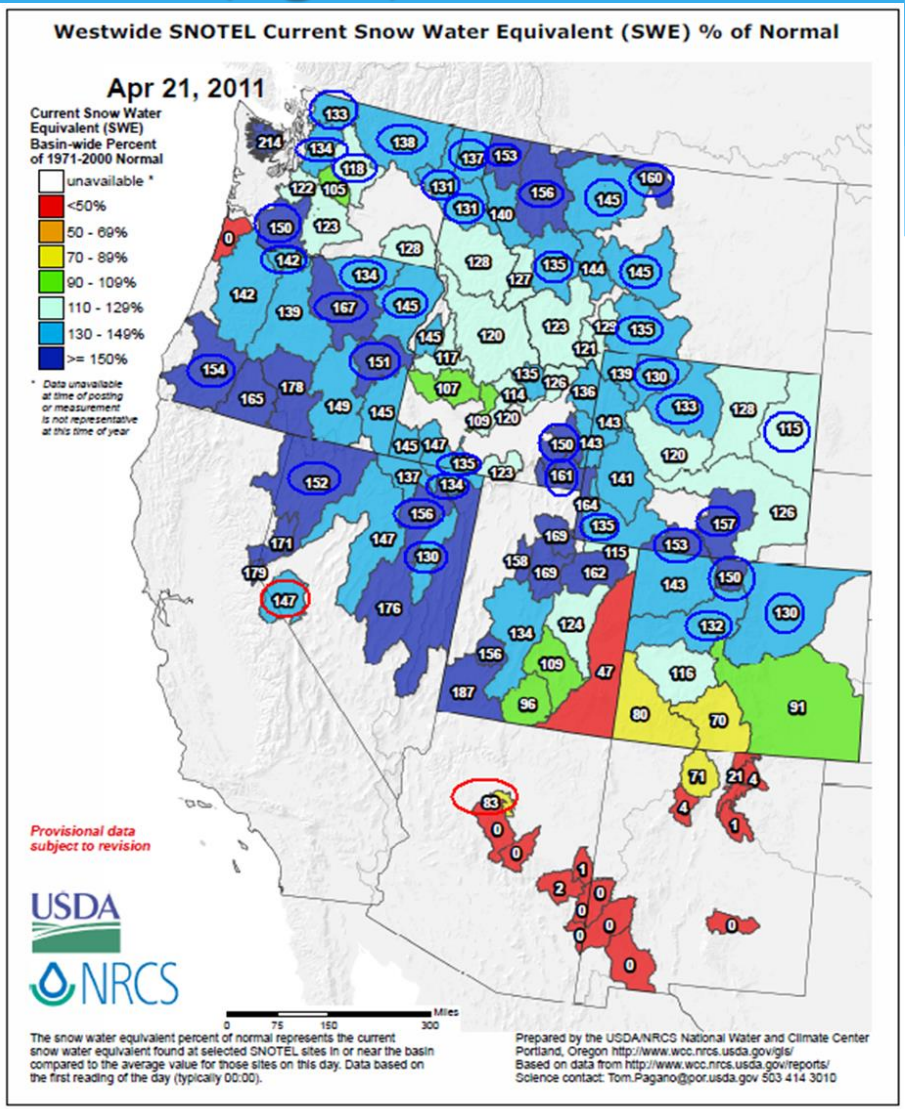




Mountain Snow Comparison

2014 (left) vs 2011 (right)



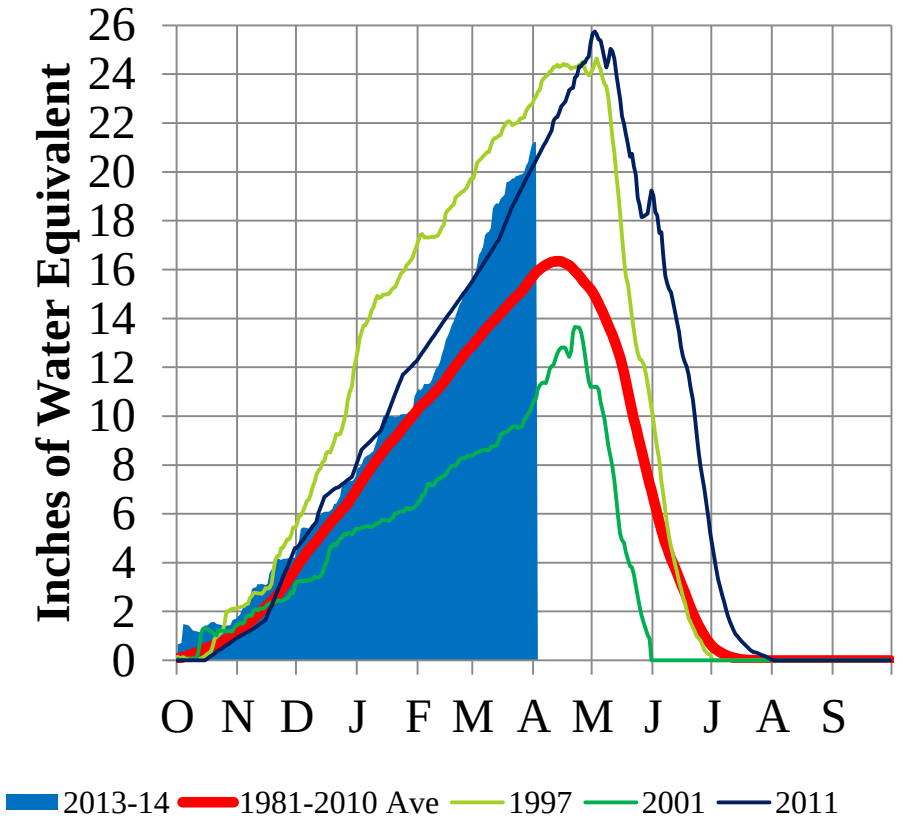


http://www.wcc.nrcs.usda.gov/cgibin/water/drought/wdr.pl

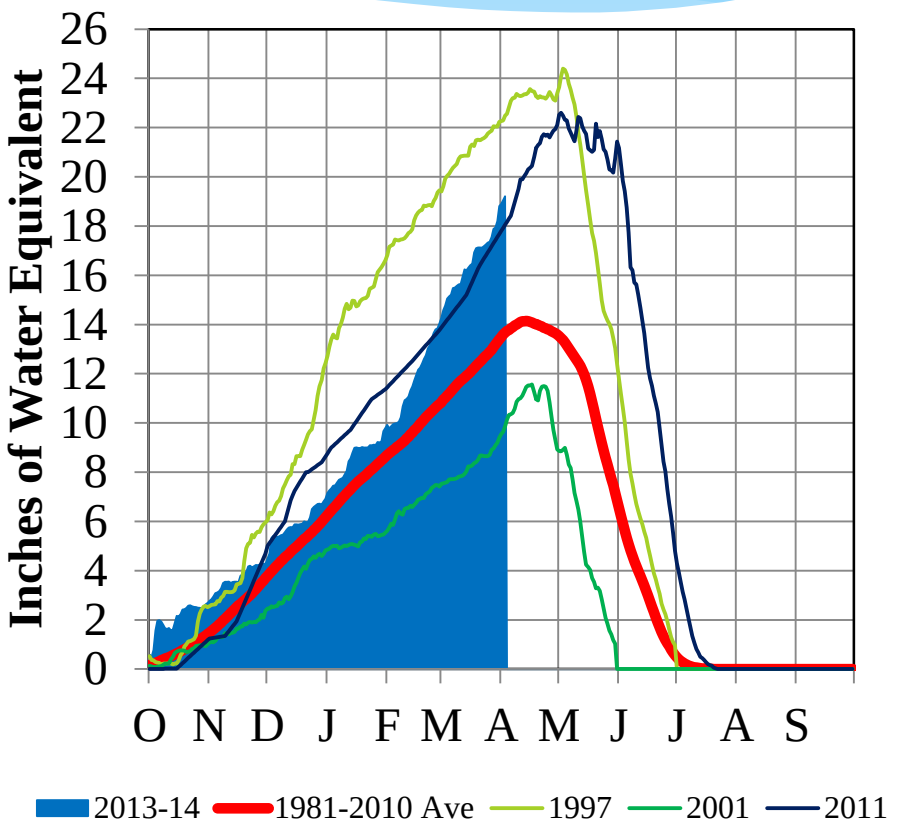
Missouri River Basin – Mountain Snowpack Water Content 2013-2014 with comparison plots from 1997*, 2001*, and 2011

April 3, 2014

Total above Fort Peck



Total Fort Peck to Garrison



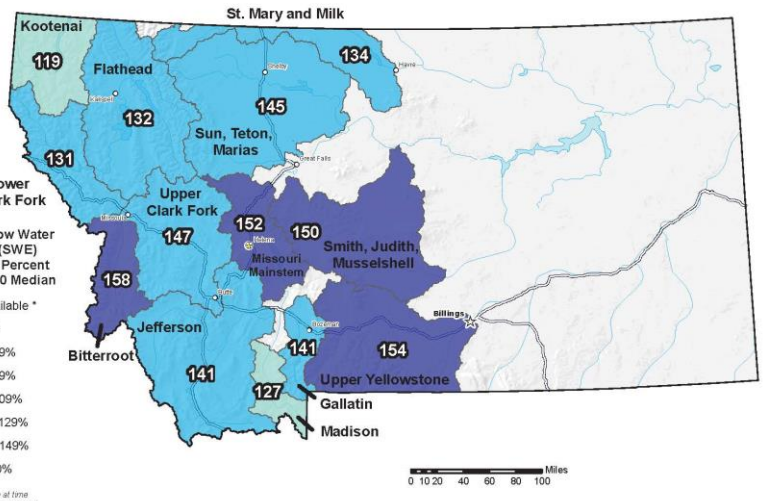
On April 3, 2014 the mountain snowpack in the "Total above Fort Peck" reach was 21.4", 132% of the 1981-2010 30-year average. The mountain snowpack in the "Total Fort Peck to Garrison" reach was 19.2", 140% of the 1981-2010 30-year average. By April 1 normally 97% of the peak has accumulated. The Missouri River basin mountain snowpack normally peaks near April 15.

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

Provisional data. Subject to revision.

Montana SNOTEL Current Snow Water Equivalent (SWE) % of Normal

Apr 03, 2014



* Data unavailable at time of posting or measurement is not representative at this time of year

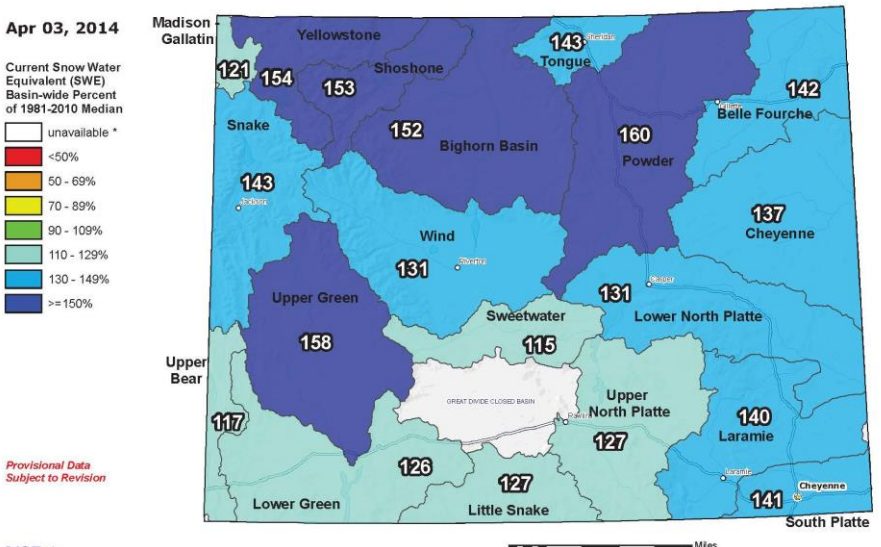
Provisional Data Subject to Revision

The snow water equivalent percent of normal represents the current snow water equivalent found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

Prepared by the USDA/NRCS National Water and Climate Center
Portland, Oregon http://www.wcc.nrcs.usda.gov/gis/
Based on data from http://www.wcc.nrcs.usda.gov/reports/
Science contact: Jim.Marron@por.usda.gov 503 414 3047

Wyoming SNOTEL Current Snow Water Equivalent (SWE) % of Normal

Apr 03, 2014



Provisional Data Subject to Revision

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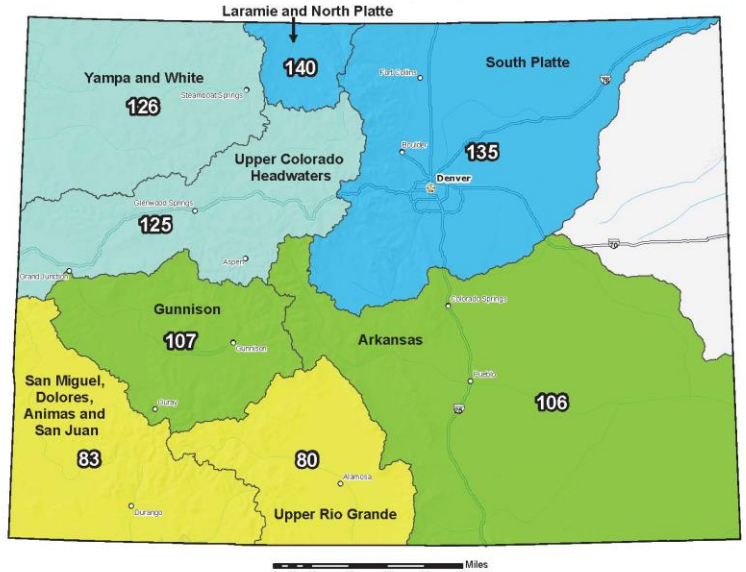
Colorado
SNOTEL Current Snow Water Equivalent (SWE) % of Normal

Apr 03, 2014



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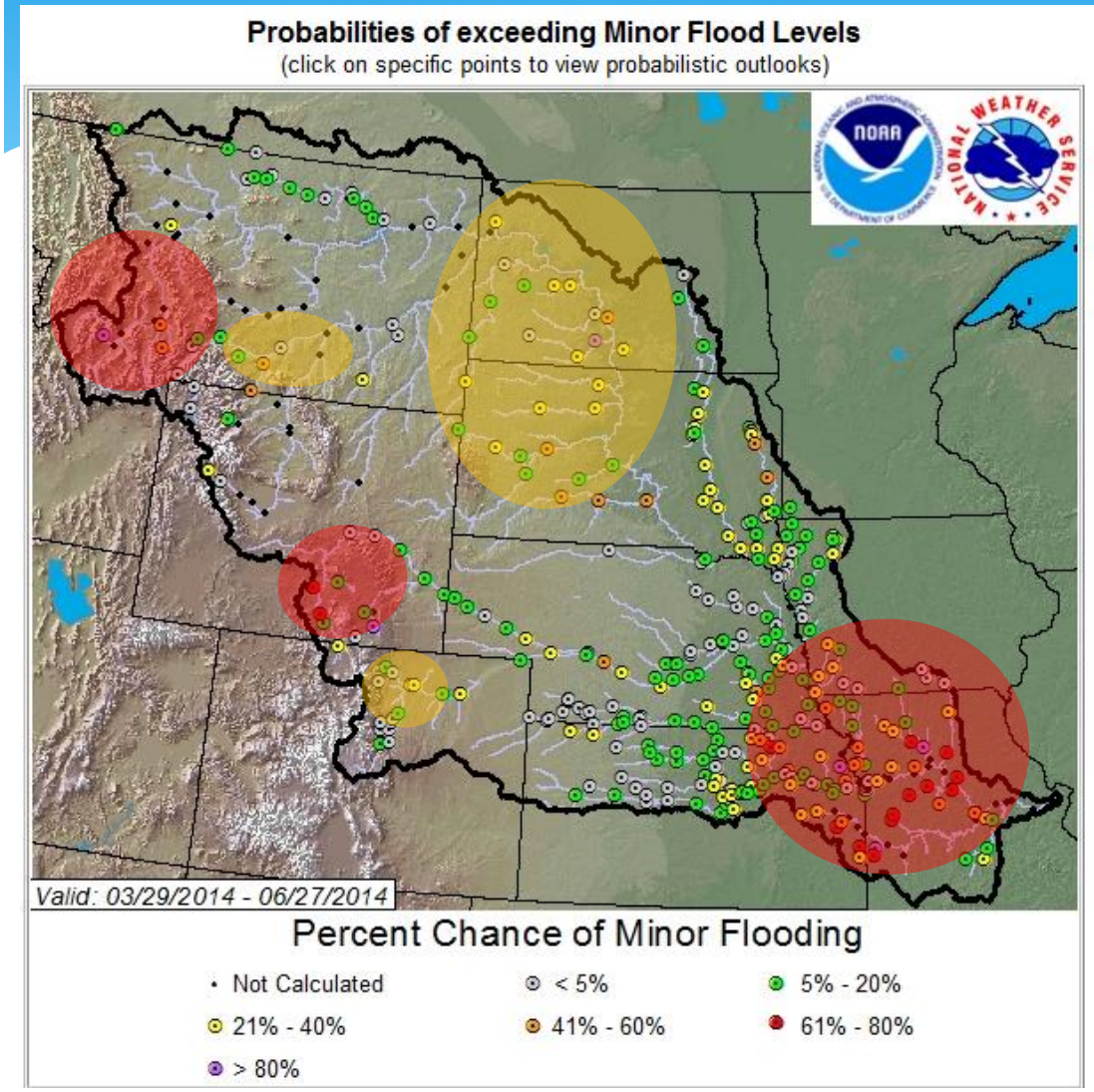
MISSOURI BASIN
RIVER FORECAST CENTER



Rivers likely to experience minor (and maybe moderate) flooding

- Big Hole River, MT
- Gallatin River, MT
- North Platte, WY
- Laramie, WY
- Marais des Cygnes—Osage River basin, KS & MO
- Grand River, MO
- Chariton River, MO
- Platte River, MO
- Missouri River, some reaches
- Smaller streams in MO & extreme eastern KS

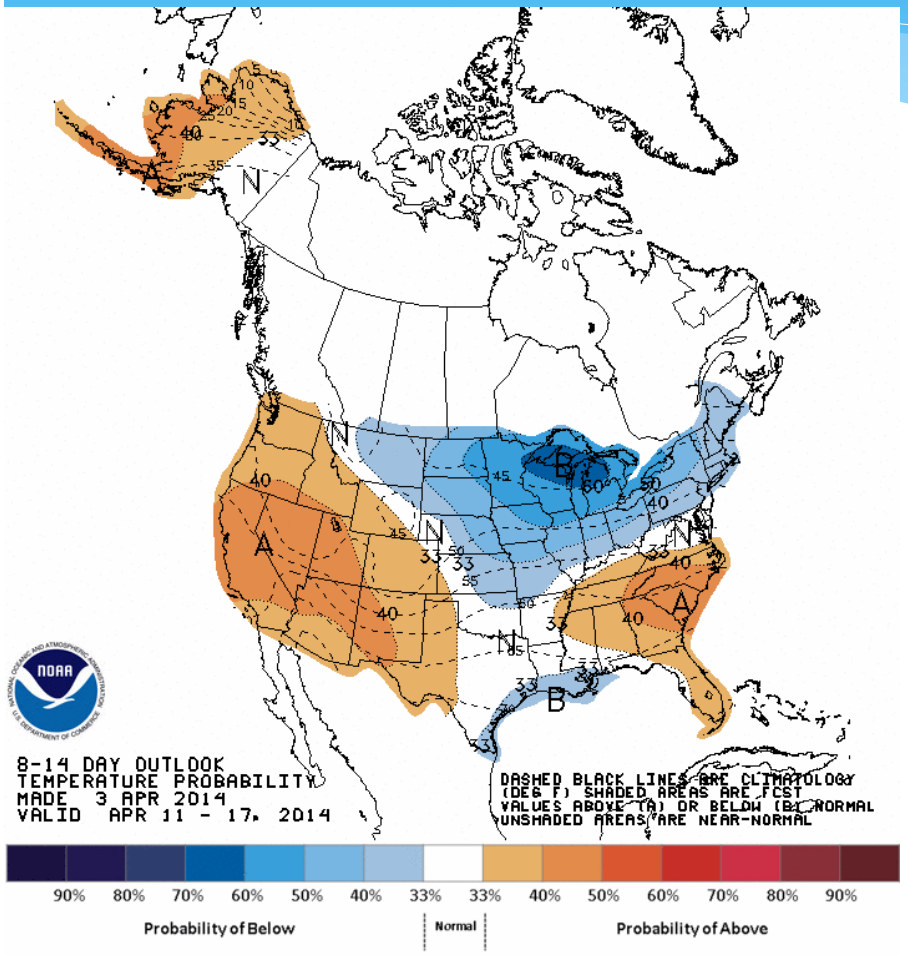
Areas to watch:

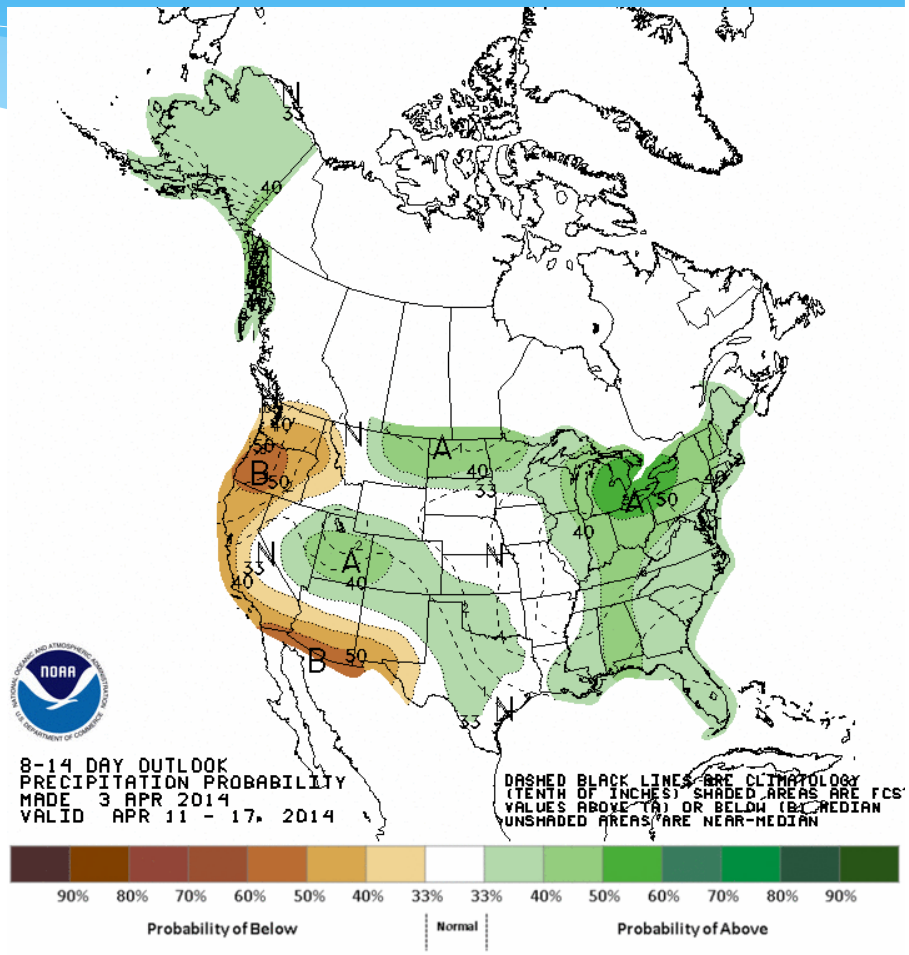
- Smaller streams in western Dakotas
- Some tributaries to the Yellowstone, MT
- Colorado foothills

Climate Outlooks

* **2 weeks out (8-14 days)**
* **April**
* **3 Months (April - June)**
* www.cpc.ncep.noaa.gov

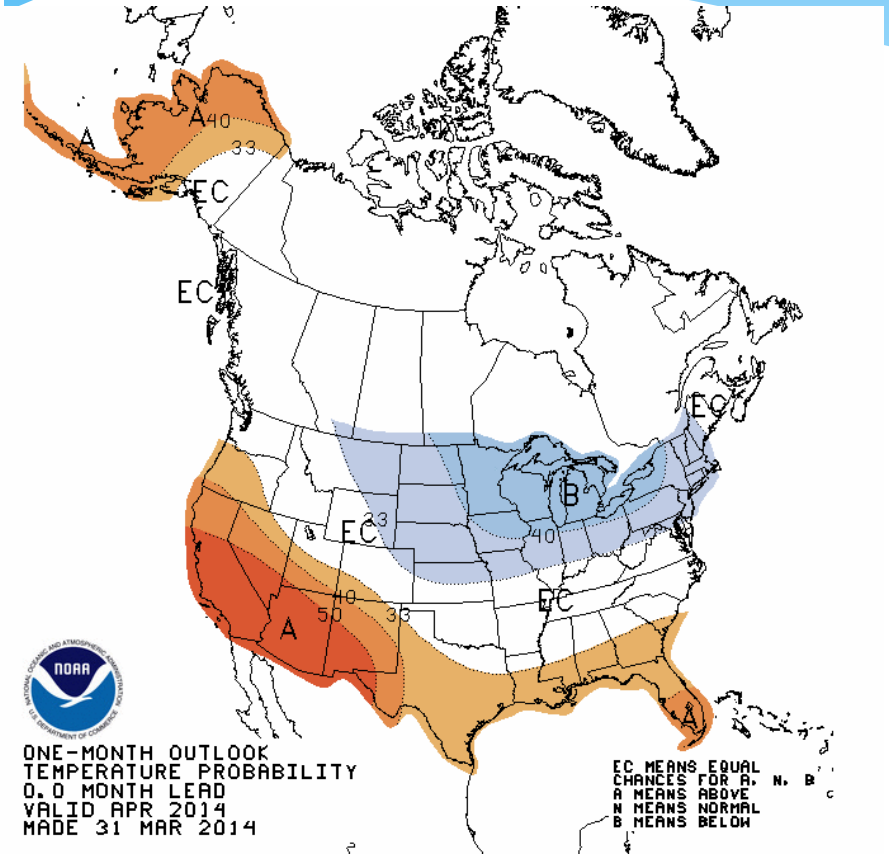
Temperature and Precipitation Probabilities for 4/11- 4/17/11

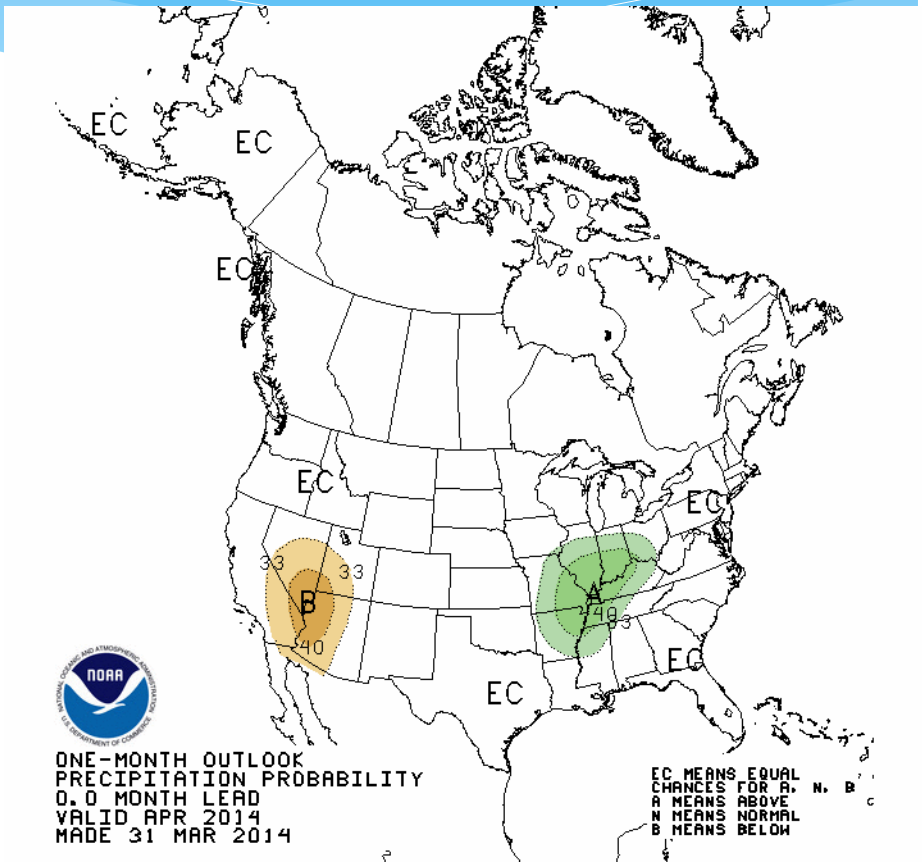




http://www.cpc.ncep.noaa.gov/products/predictions/814day/index.php

April Temperature and Precipitation Probabilities

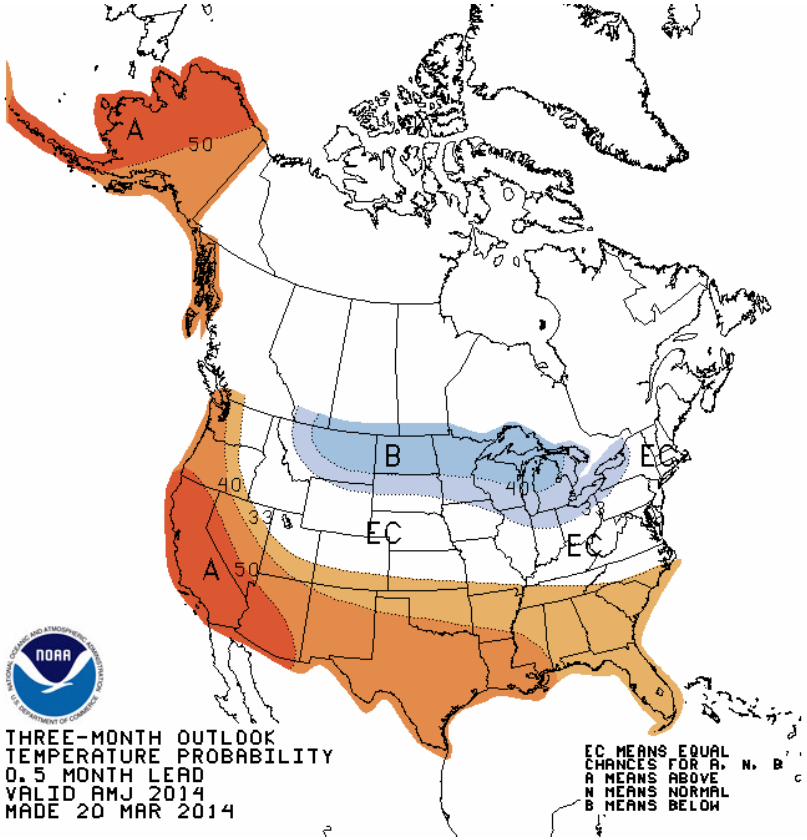


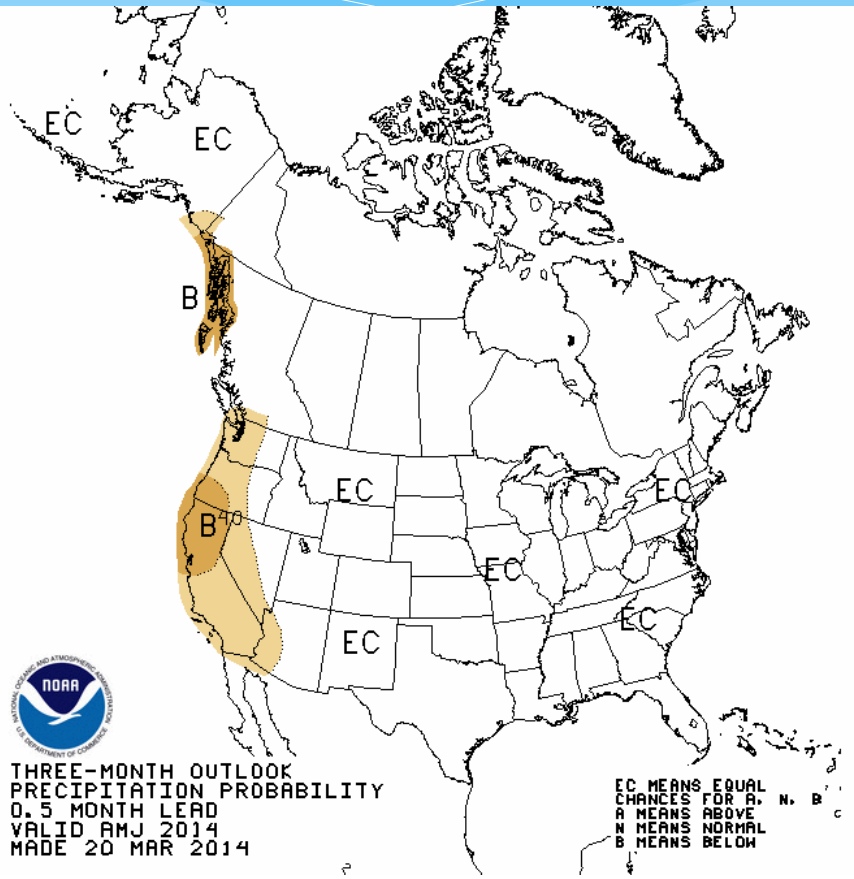


http://www.cpc.ncep.noaa.gov/products/predictions/30day/

3 Month Temperature and Precipitation Probabilities

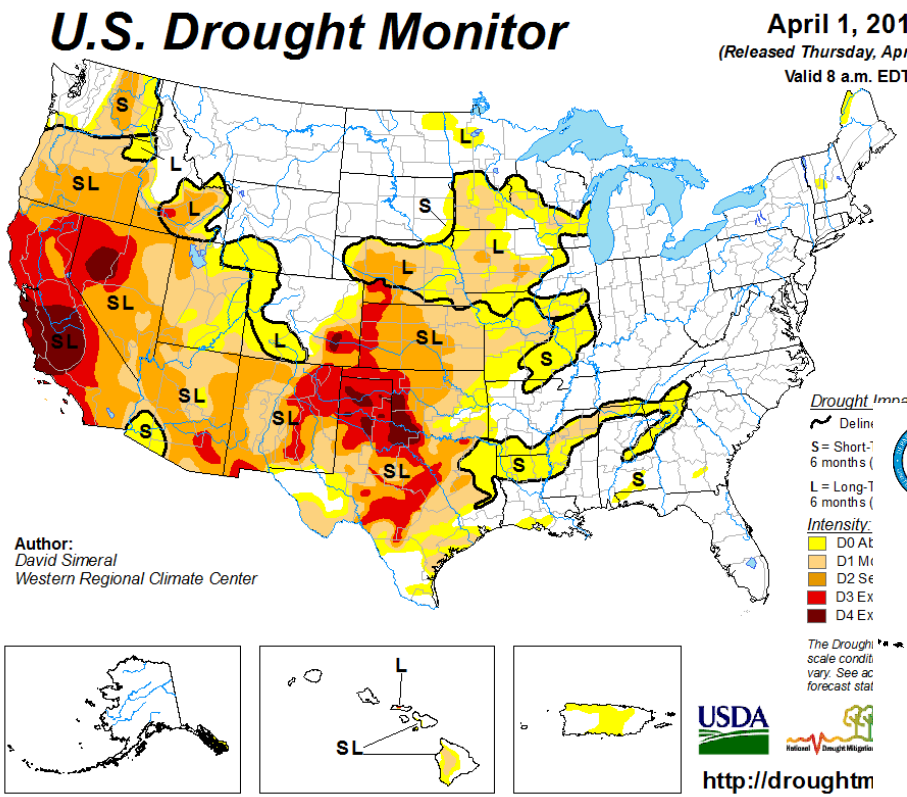
(April - June)

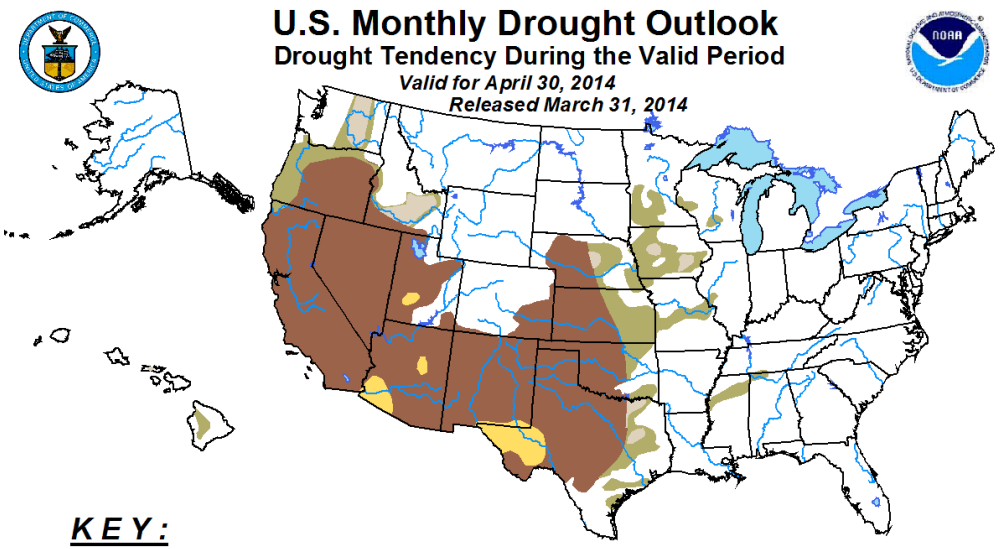




http://www.cpc.ncep.noaa.gov/products/predictions/long_range/seasonal.php?lead=1

Drought Update

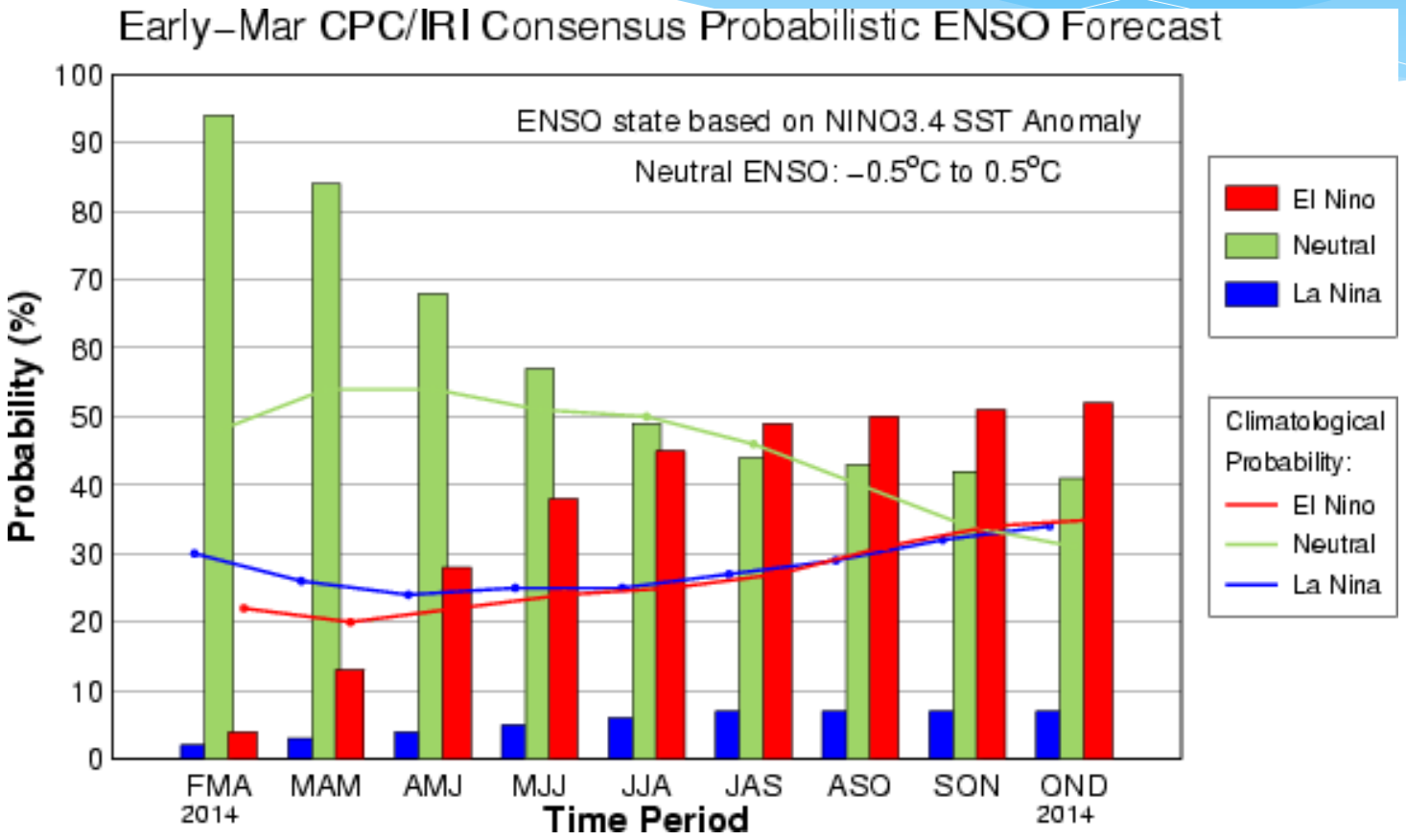




CPC/IRI Probabilistic ENSO Outlook

(updated 6 March 2014)

ENSO-neutral is favored through the Northern Hemisphere spring 2014, with a 50% chance of El Niño during the summer or fall 2014.



Key Points

* **Current Conditions**
  * Large mountain snow packs. Less so in plains - episodic
  * Some frozen soils in plains/moist west
  * Temps still cooler than average
* **Predictions**
  * Likely cooler still into the spring.
  * Precipitation outlooks – equal chances
  * No indications of specific large events - forecastable
  * El Nino likely coming – little impact on current situation
  * Some minor tributary flooding expected
* **Caveat**
  * Near point of peak accumulation – extreme individual events difficult to forecast

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 , 605-688-5678
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  * John Eise: john.eise@noaa.gov, 816-268-3144
  * Kevin Stamm: kevin.d.stamm@usace.army.mil
  * Kevin Low: Kevin.Low@noaa.gov
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  * **Weather:**
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