Missouri River Basin Water Management Monthly Update

Participating Agencies

U.S. Army Corps of Engineers
State of South Dakota
National Weather Service

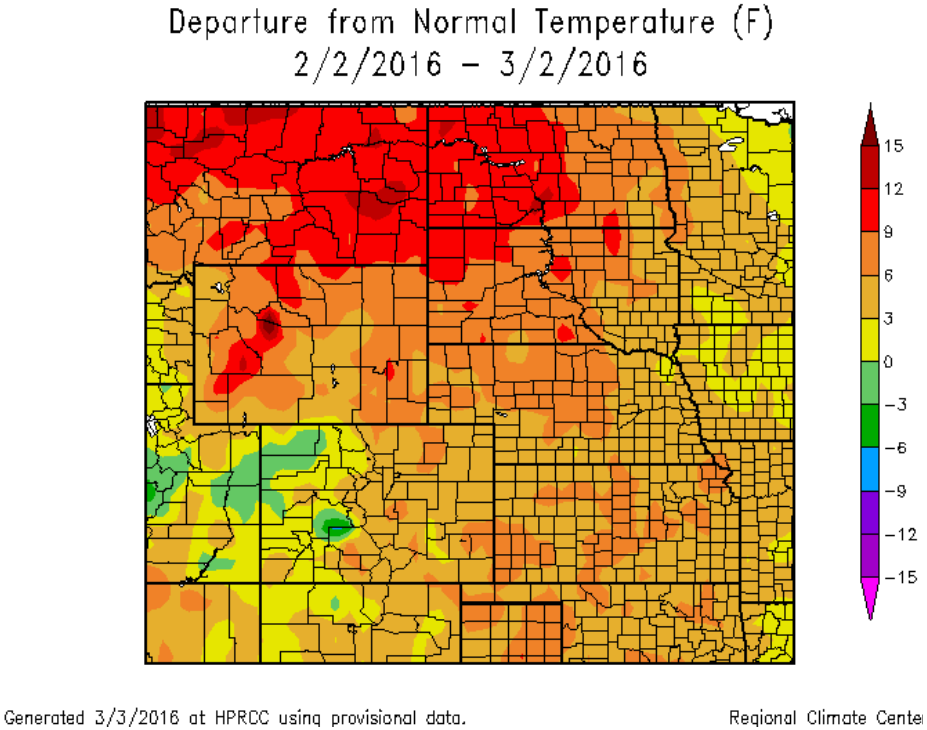
March 4, 2016

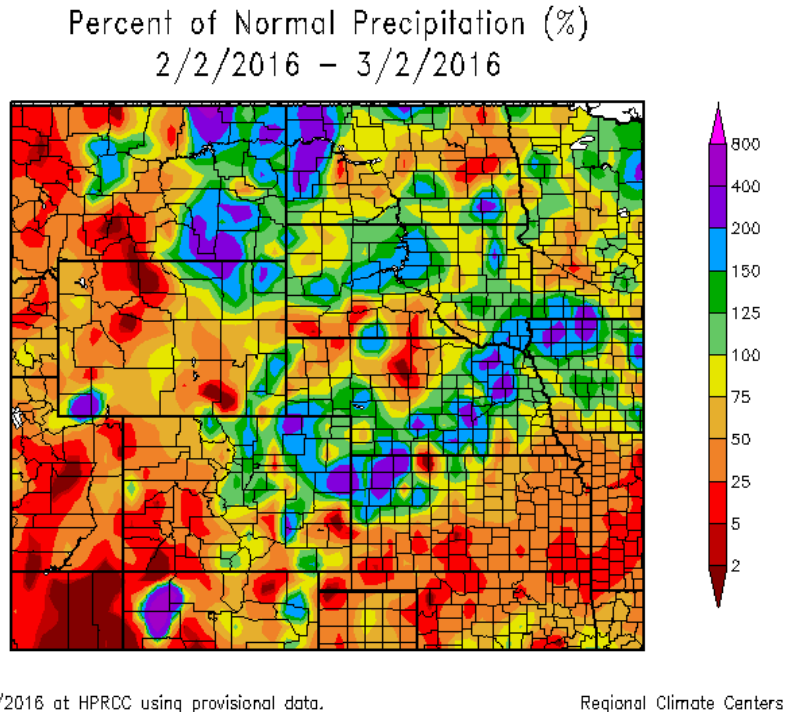
US Army Corps of Engineers
BUILDING STRONG®

Weather / Climate

Dr. Dennis Todey
South Dakota State Climatologist

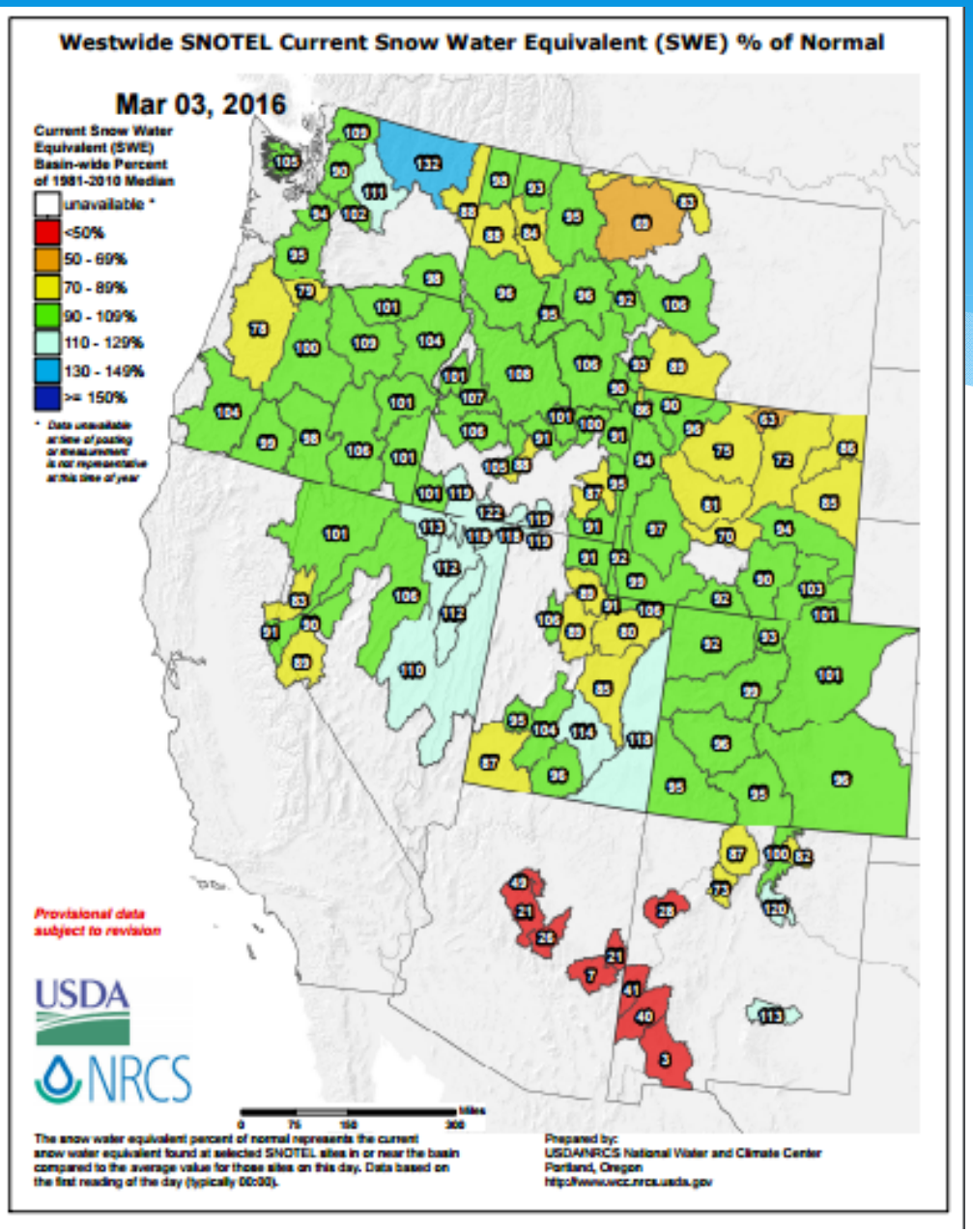
Conditions – Last 30 days





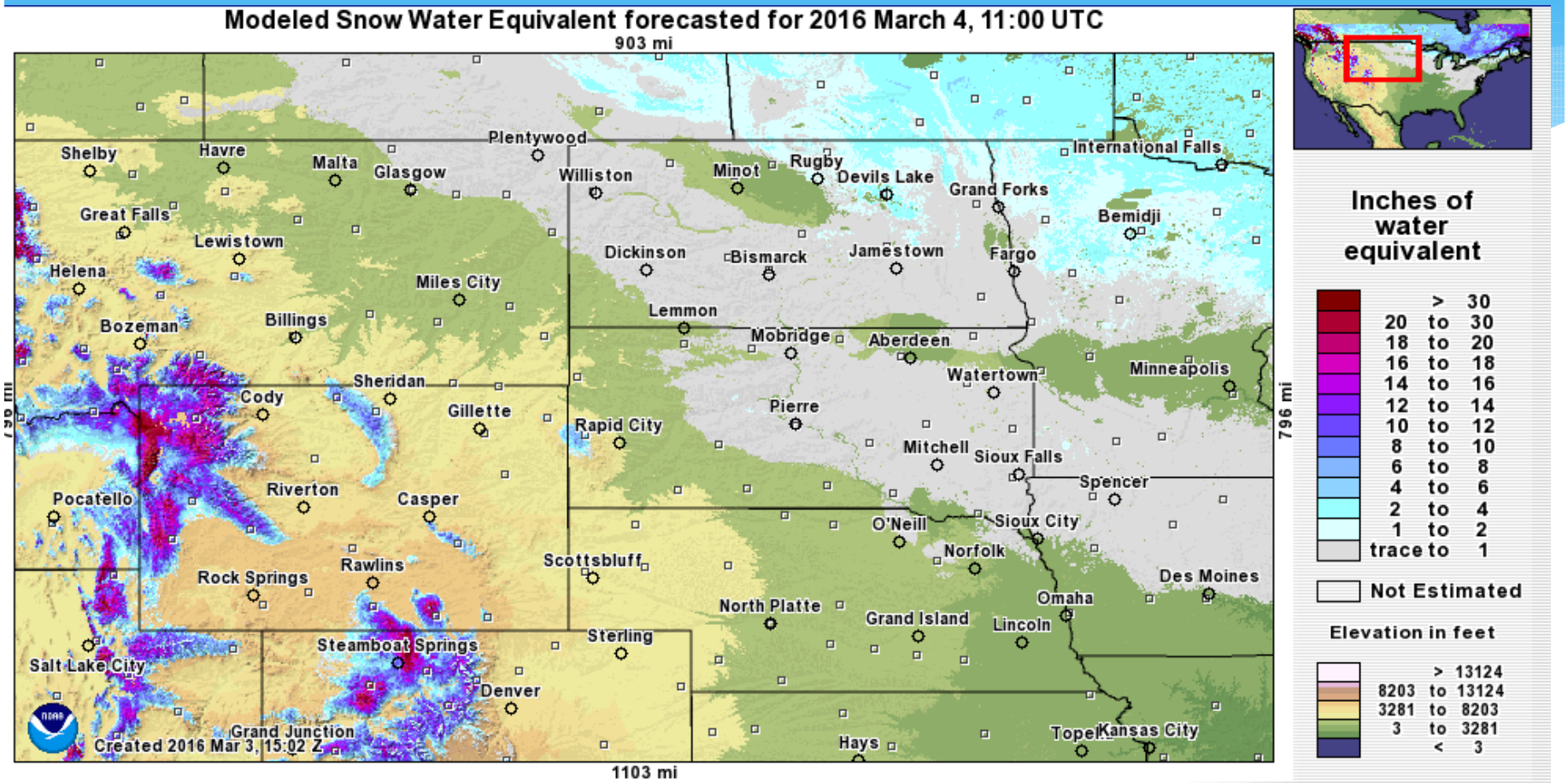
http://hprcc.unl.edu/maps.php?map=ACISClimateMaps

Mountain Snowpack



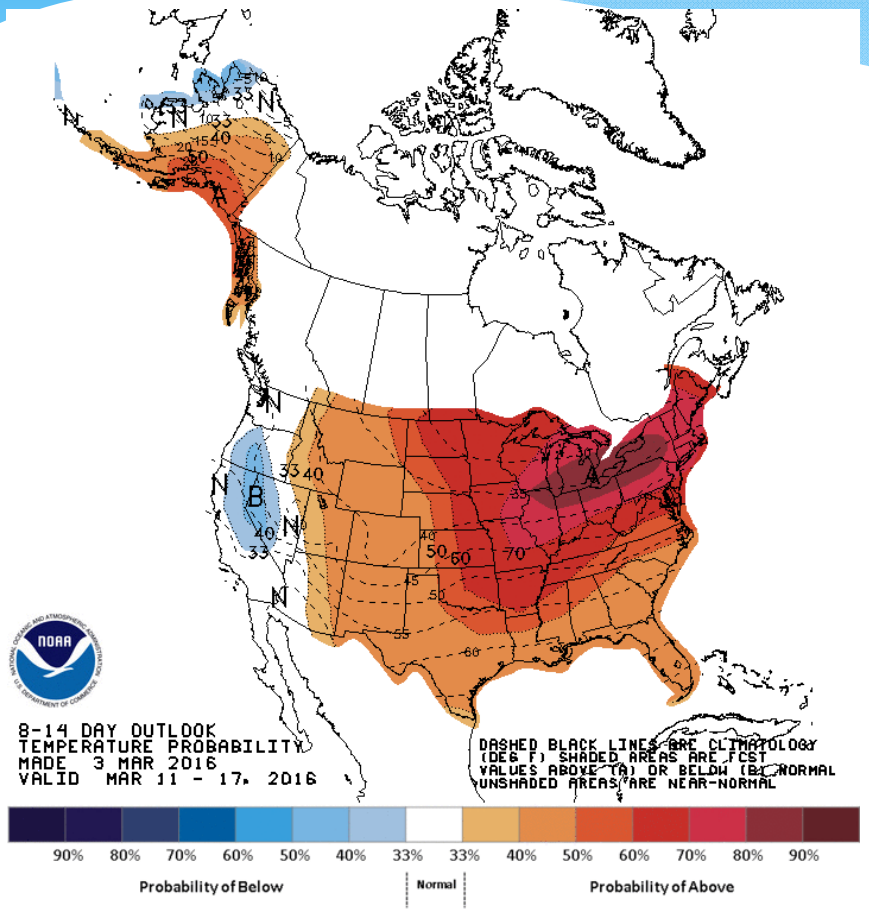
http://www.wcc.nrcs.usda.gov/ftpref/data/water/wcs/gis/maps/west_swepctnormal_update.pdf

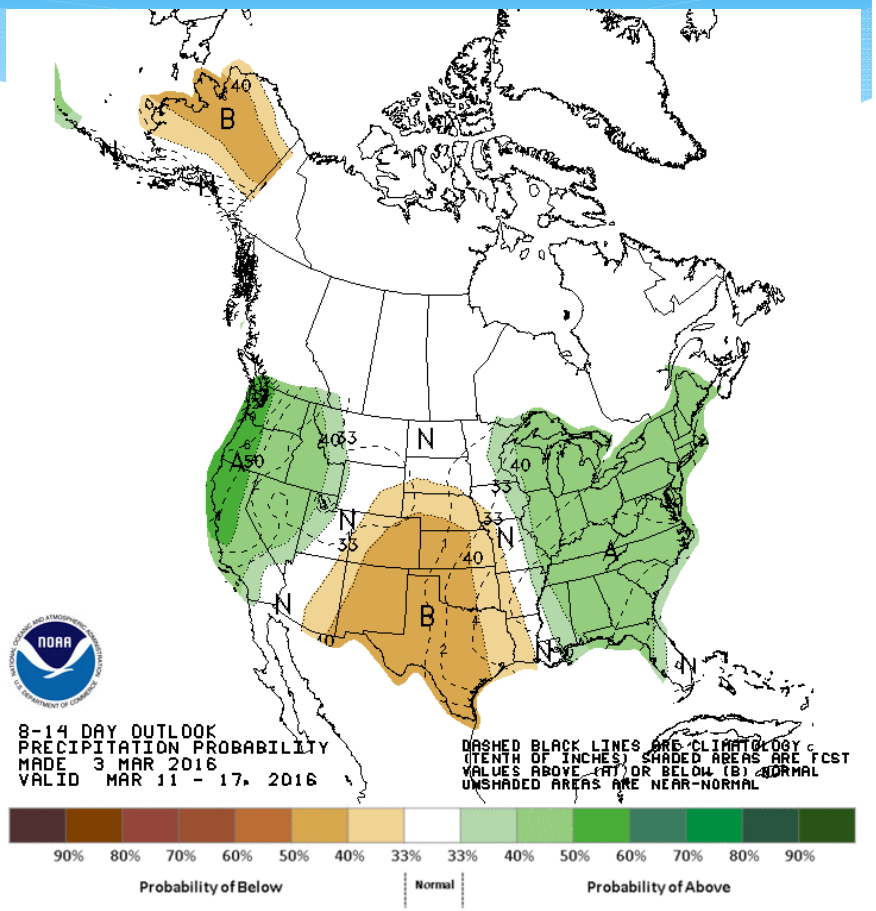
Plains Snowpack – Snow Water Equiv.



http://www.nohrsc.noaa.gov

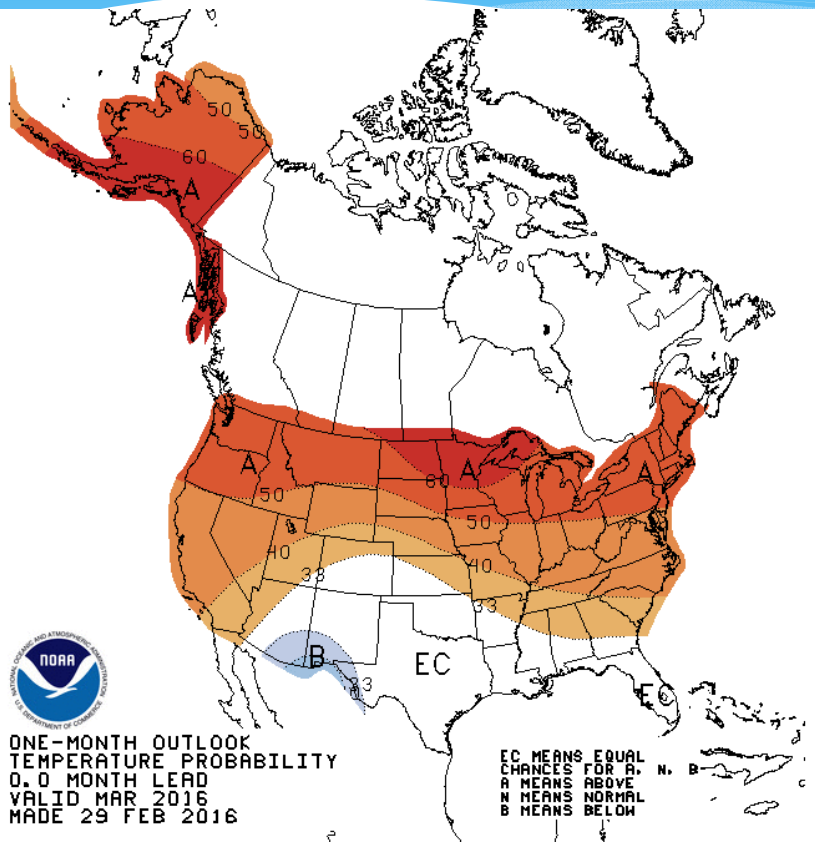
Temperature and Precipitation Probabilities (3/11-3/17)



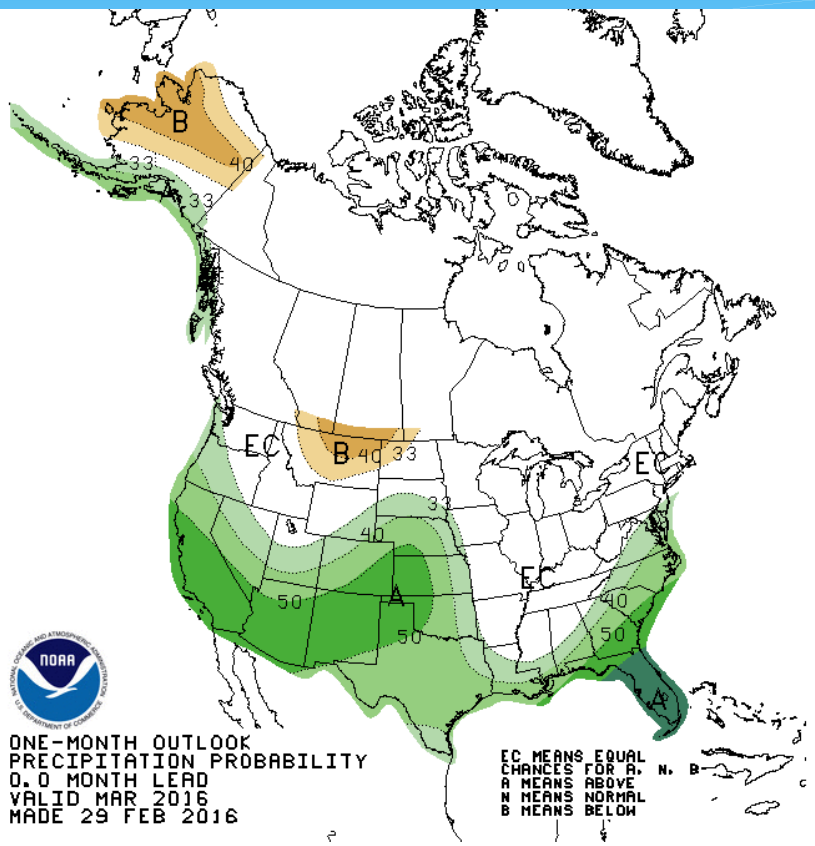


http://www.cpc.ncep.noaa.gov

March Temperature and Precipitation Probabilities



Temperature

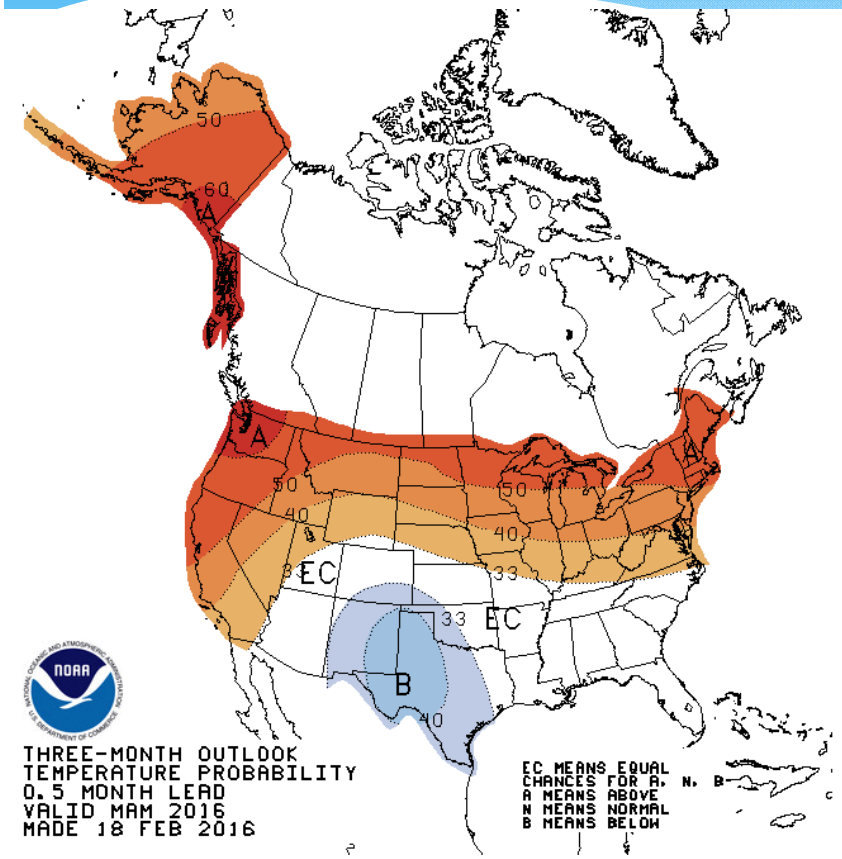


Precipitation

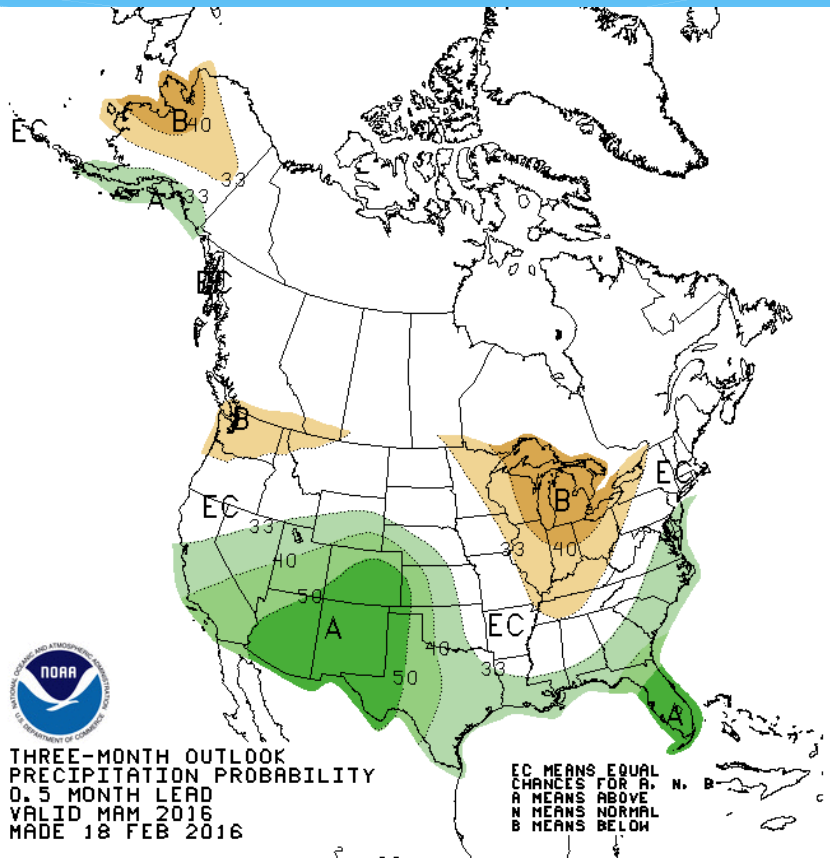
http://www.cpc.ncep.noaa.gov/products/predictions/long_range/seasonal.php?lead=1

3 Month Temperature and Precipitation Probabilities

(March – April - May)



Temperature



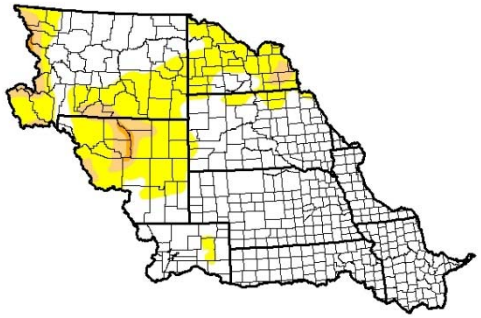
Precipitation

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

Drought Update

U.S. Drought Monitor

Missouri Watershed



March 1, 2016

(Released Thursday, Mar. 3, 2016)

Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	69.47	30.53	5.60	0.60	0.00	0.00
Last Week 2/23/2016	72.87	27.13	6.28	0.31	0.00	0.00
3 Months Ago 12/1/2015	67.82	32.18	6.24	2.59	0.00	0.00
Start of Calendar Year 12/29/2015	76.44	23.56	5.55	1.28	0.00	0.00
Start of Water Year 9/29/2015	65.65	34.35	6.75	3.42	0.66	0.00
One Year Ago 3/3/2015	73.39	26.61	2.01	0.72	0.00	0.00

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.

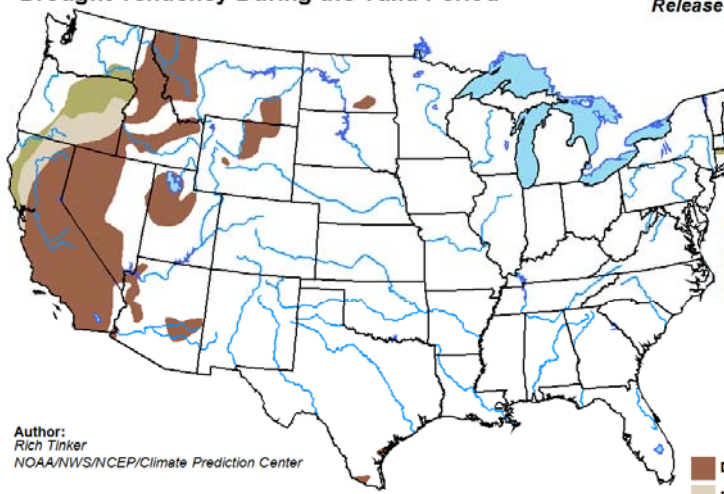
Author:
David Miskus
NOAA/NWS/NCEP/CPC

http://droughtmonitor.unl.edu/

U.S. Monthly Drought Outlook

Drought Tendency During the Valid Period

Valid for March 2016
Released February 29, 2016



Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short lived events. "Ongoing" drought areas are based on the U.S. Drought Monitor areas (intensities of D1 to D4).

NOTE: The tan areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period, although drought will remain. The green areas imply drought removal by the end of the period (D0 or none).

- **Drought persists**
- **Drought remains but improves**
- **Drought removal likely**
- **Drought development likely**

Author:
Rich Tinker
NOAA/NWS/NCEP/Climate Prediction Center

http://go.usa.gov/3eZGd

Key Points

* **Current Conditions**
  * Current ENSO condition – El Niño (weakening)
  * Plains snowpack limited
  * Mountain snowpack mixed but below average
  * Areas of moderate drought in upper basin/wet lower basin
* **Predictions**
  * El Niño weakening through the spring
  * Likely warmer than average through spring
  * Precipitation into spring – possibly wetter in the south, drier to the north. Equal chances around North Dakota.

Basin Conditions / Flood Outlook

Kevin Low, Hydrologist

National Weather Service, Missouri Basin River Forecast Center

SUMMARY POINTS

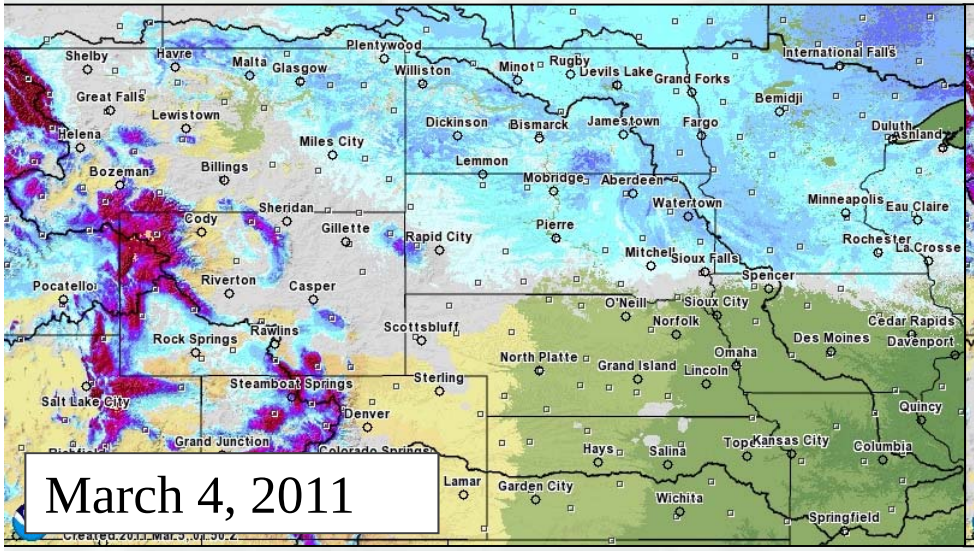
- **Mountain snowpack is below normal.**
- **Plains snowpack is limited and very shallow.**
- **Frozen ground and river ice not factors this Spring.**
- **No significant flooding expected in mountainous, or in northern plains.**
- **Typical thunderstorm-driven flooding expected in southeastern third of the basin.**
- **National Hydrologic Assessment will be issued 17 March.**

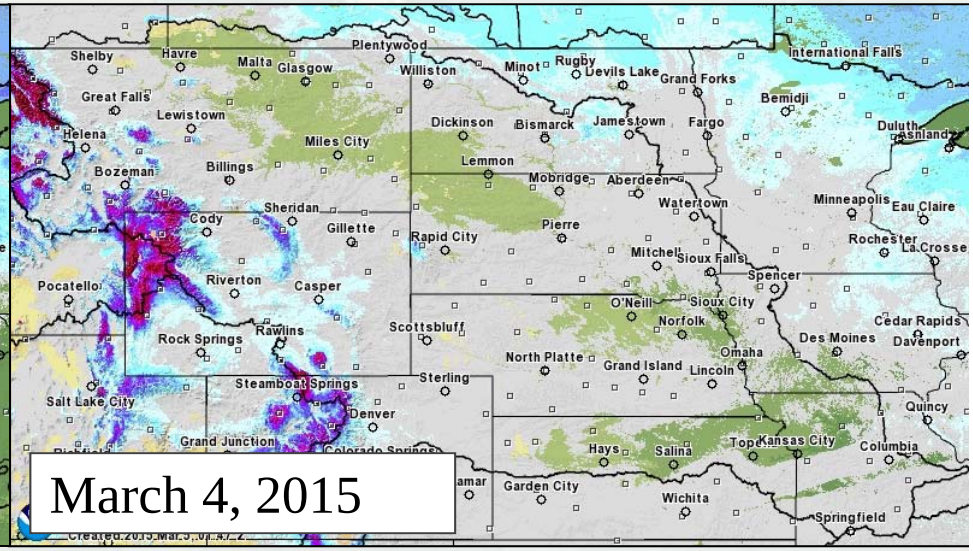
Upper Basin Runoff for 2016

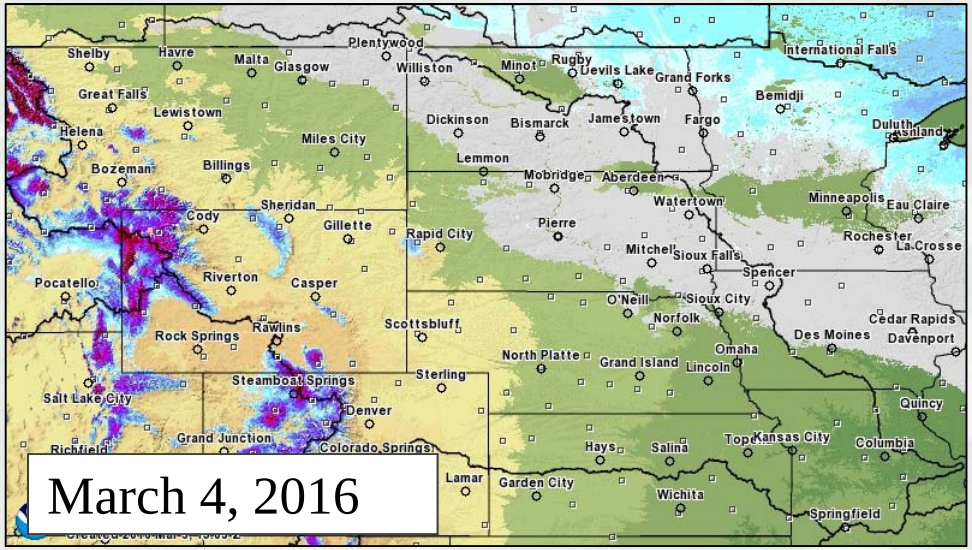
Roger Kay, P.E.

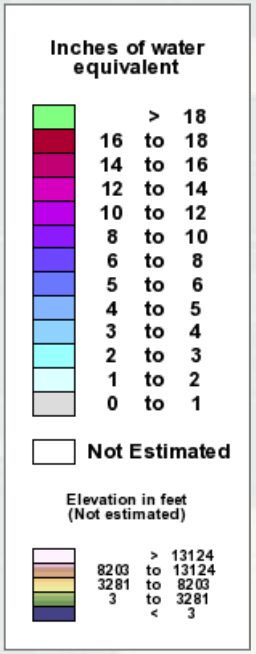
U.S. Army Corps of Engineers, Missouri River Basin Water Management

Plains Snowpack





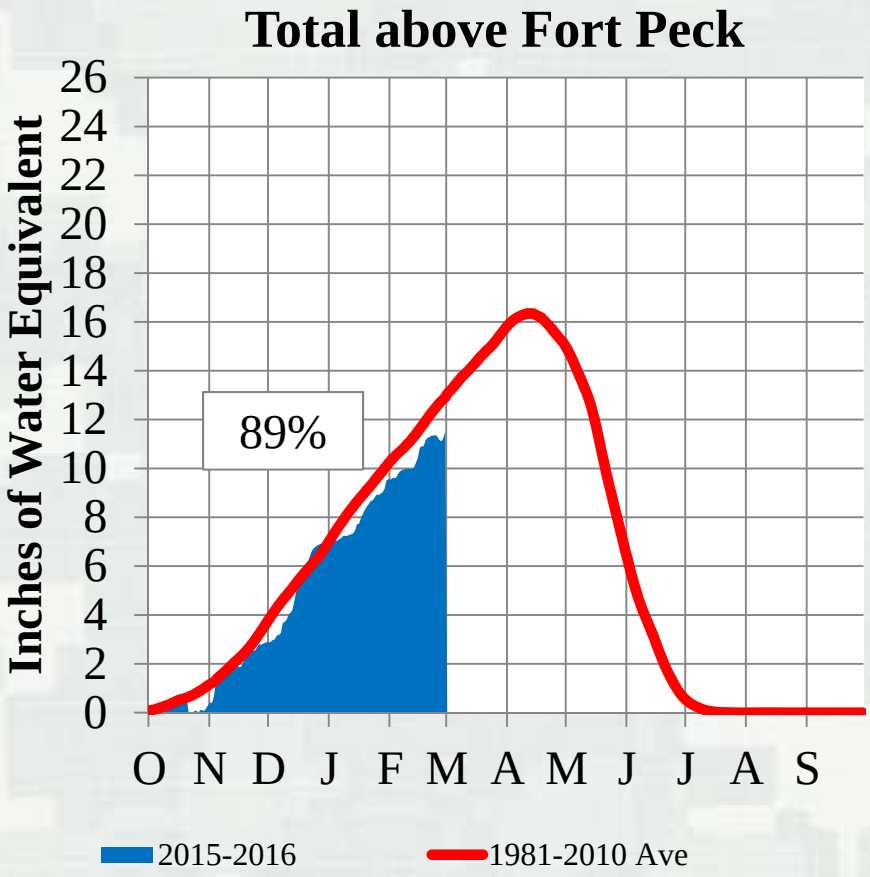


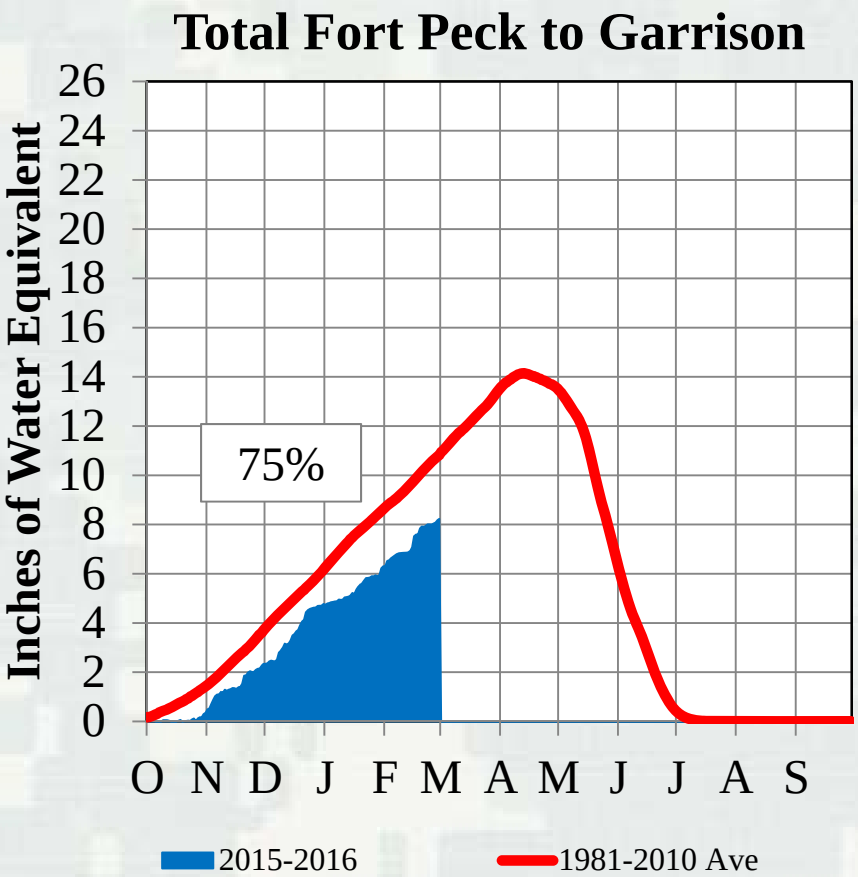


Source: NOAA National Operational Hydrologic Remote Sensing Center (NOHRSC)

Missouri River Basin
2015-16 Mountain Snowpack Water Content

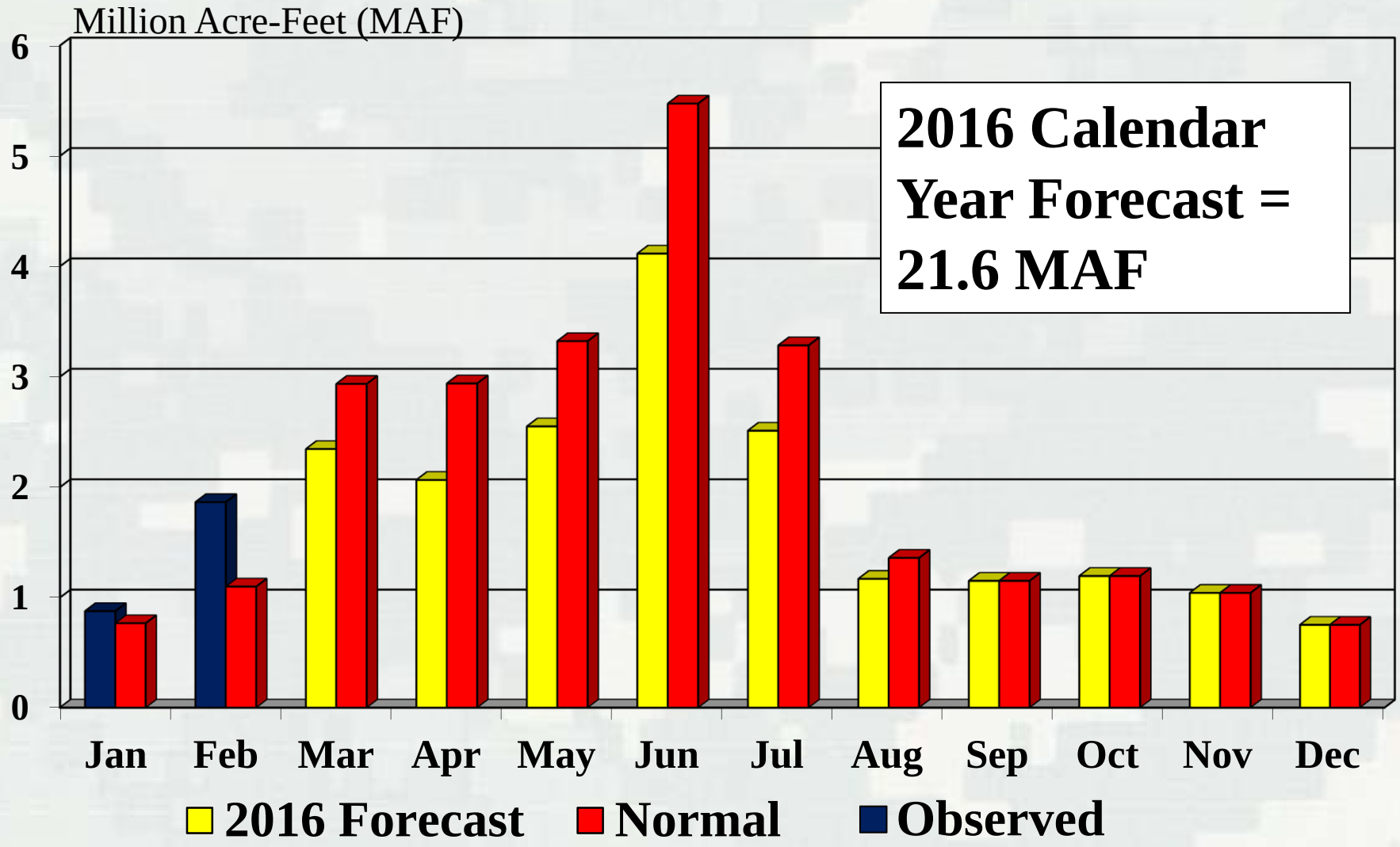
February 29, 2016





About 80% of peak accumulation normally occurs by March 1.

Missouri River Runoff above Sioux City, Iowa
2016 Forecast

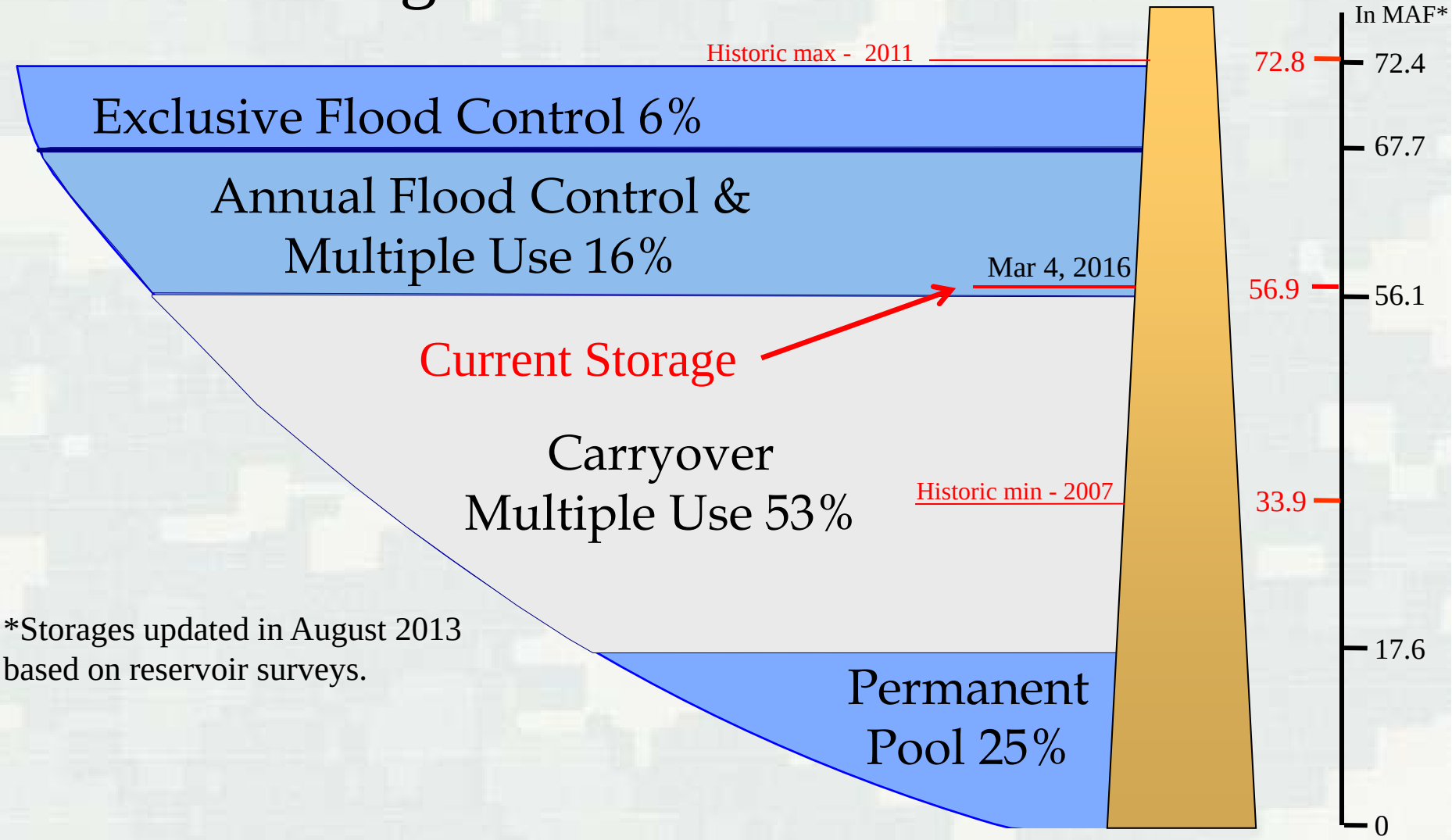


Reservoir System Regulation

Joel Knofczynski, P.E.

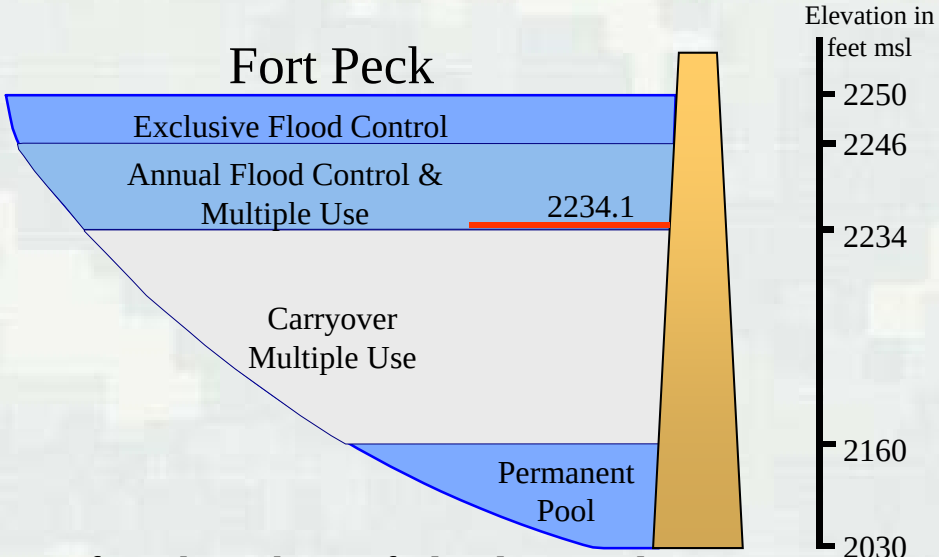
U.S. Army Corps of Engineers, Missouri River Basin Water Management

Missouri River Mainstem System Storage Zones and Allocations

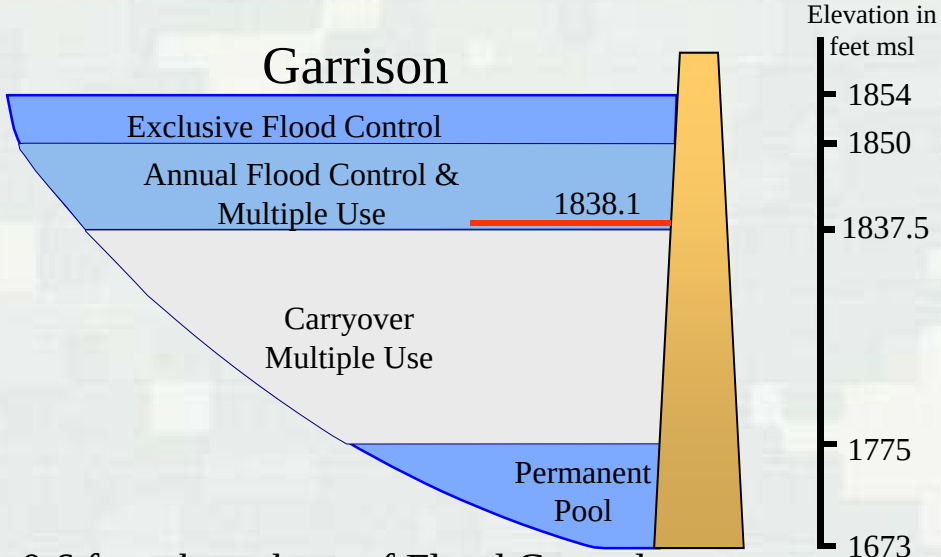


*Storages updated in August 2013 based on reservoir surveys.

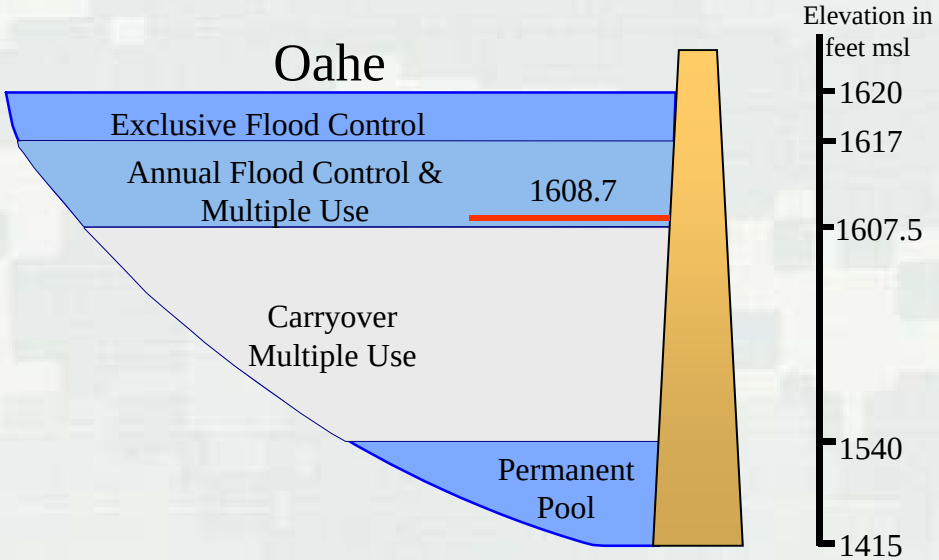
Current Reservoir Levels – March 4, 2016



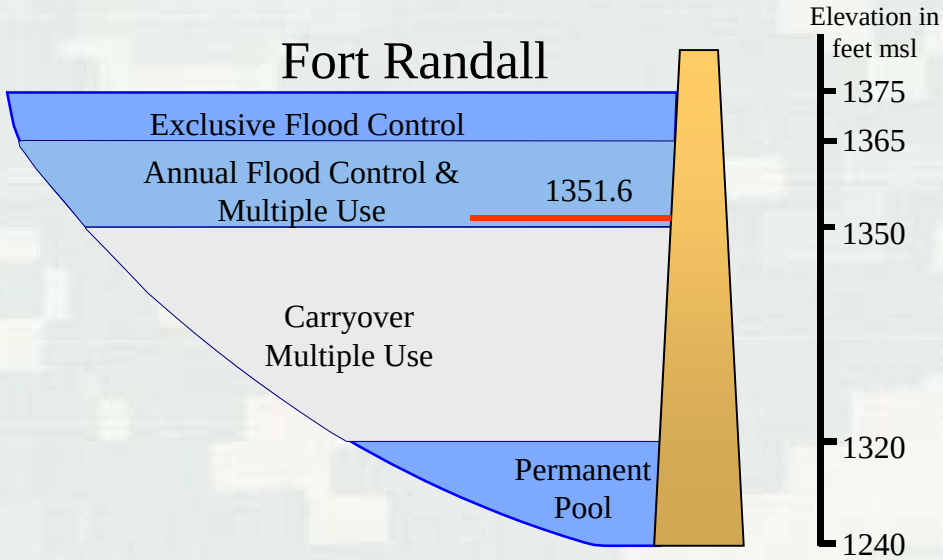
0.1 feet above base of Flood Control zone



0.6 feet above base of Flood Control zone



1.2 feet above base of Flood Control zone



1.6 feet above base of Flood Control zone

Key Points

- All stored 2015 flood waters have been evacuated
- Currently, 15.5 MAF of 16.3 MAF of flood storage space is available.
- Full navigation season (Basic)
- Full service flow support for season (Basic)
- No Spring Pulse
- Annual power production of 9.1 BKWhrs (average is 10.0 BKWhrs)
- Good service to all authorized purposes

BUILDING STRONG®

April's Update

Spring Public Meetings

April 12, 11:00 am, Smithville, MO

April 12, 5:00 pm, Nebraska City, NE

April 13, 11:00 am, Fort Peck, MT

April 13, 6:00 pm, Bismarck, ND

April 14, 11:00 am, Pierre, SD

Contact Information

Name	Office	Email Address	Phone Number
Ms. Michael Coffey	USACE, NWD Public Affairs Office	Michael.A.Coffey@usace.army.mil	503-808-3722
Dr. Dennis Todey	South Dakota State University, State Climatologist	Dennis.Todey@sdstate.edu	605-688-5678
Kevin Low	National Weather Service, Hydrologist	Kevin.Low@noaa.gov	
Doug Kluck	NOAA, Kansas City, Climatologist	Doug.Kluck@noaa.gov	816-994-3008
Jody Farhat	USACE, Chief, Missouri River Basin Water Management	Jody.S.Farhat@usace.army.mil	402-996-3840
Roger Kay	USACE, MRBWM, Hydraulic Engineer	Roger.L.Kay@usace.army.mil	402-996-3875
Joel Knofczynski	USACE, MRBWM, Hydraulic Engineer	Joel.D.Knofczynski@usace.army.mil	402-996-3852