



**NATIONAL WEATHER SERVICE
MISSOURI BASIN RIVER FORECAST CENTER**



**MISSOURI RIVER CORPS, COAST GUARD &
NAVIGATORS MEETING**

Current Climate Conditions and Outlook

**Kevin Low, P.E.
10 February 2016**



Building a Weather-Ready Nation



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Today's Presentation

- **Current conditions**
- **Latest Climate Prediction Center's (CPC) precipitation and temperature outlooks**
- **NWS Spring Flood Potential**

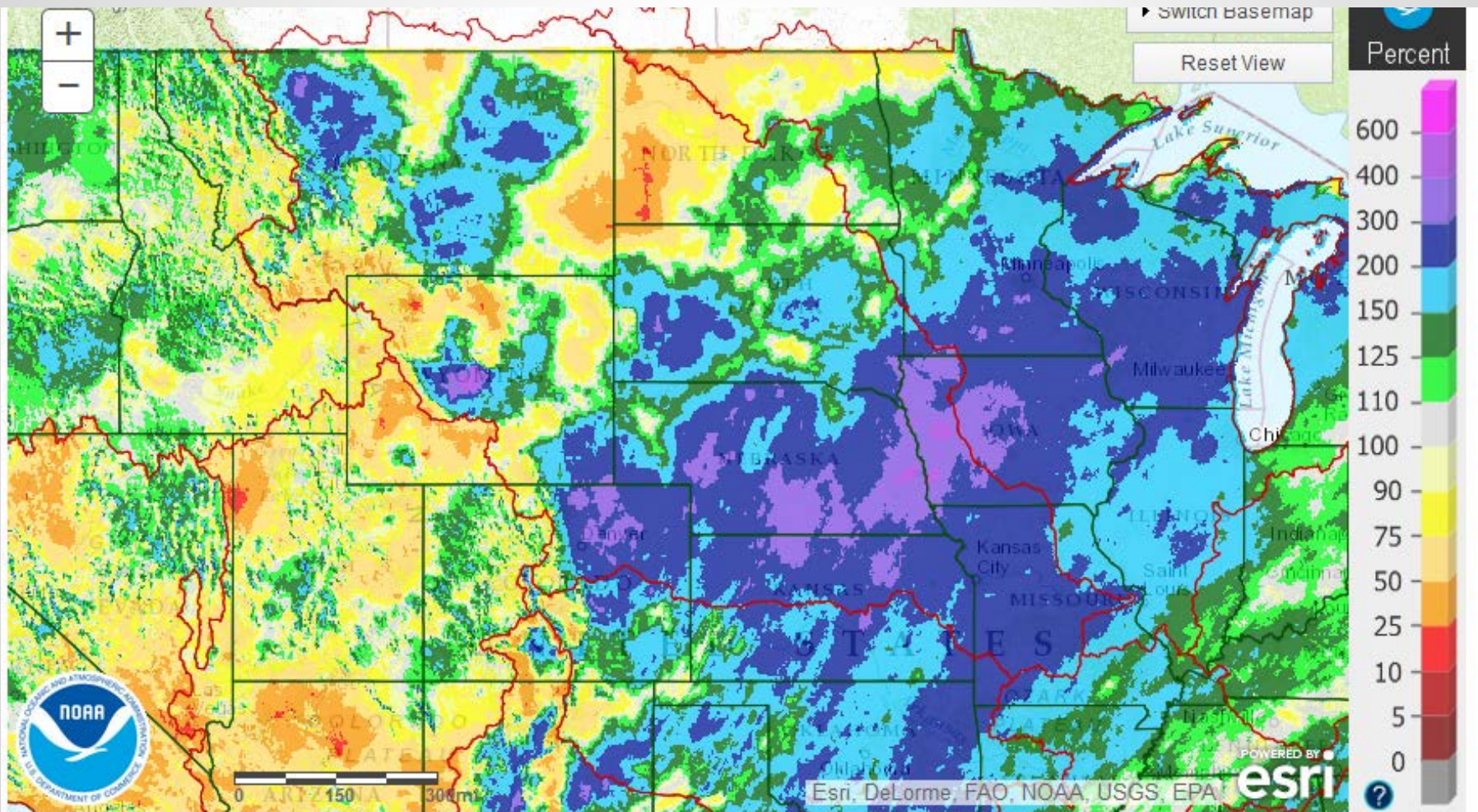




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Past 90-day % of Normal Precipitation





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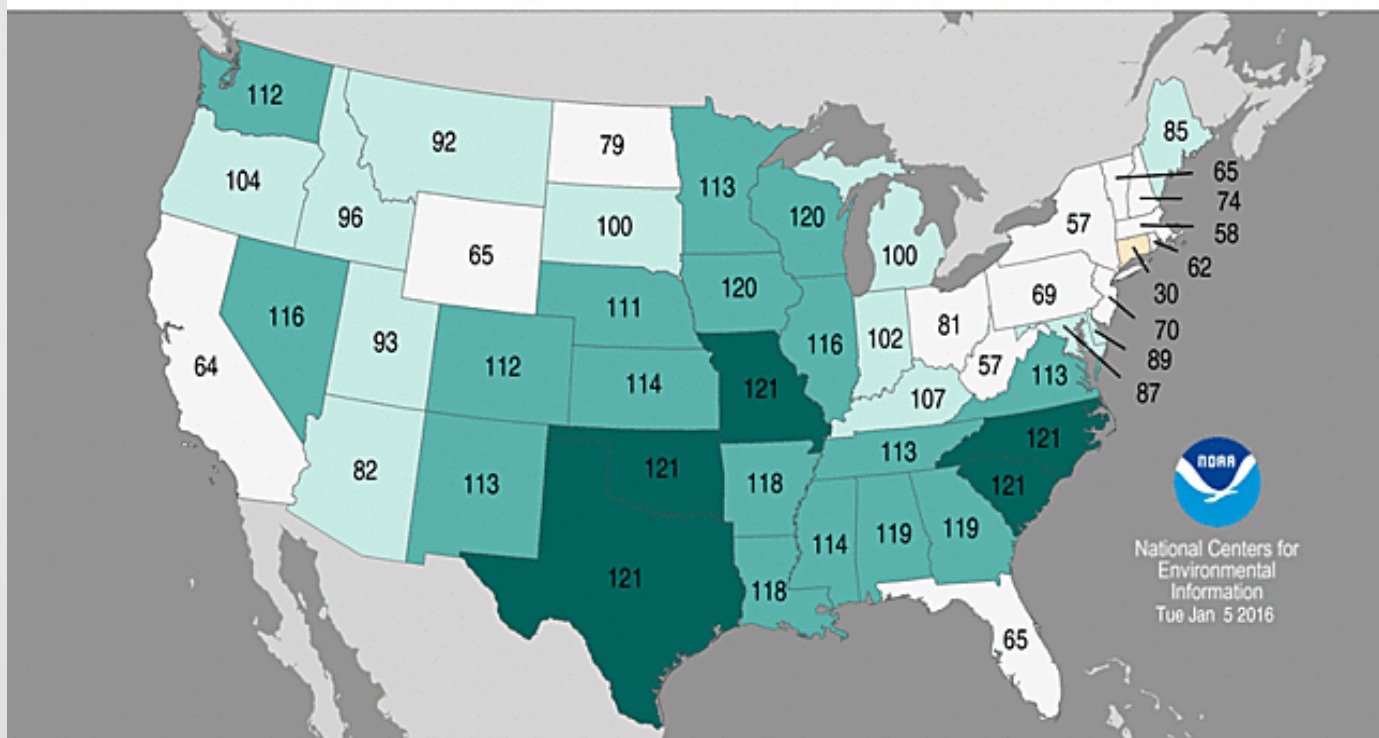


OCT-NOV-DEC HISTORICAL RANKING

Statewide Precipitation Ranks

October–December 2015

Period: 1895–2015



National Centers for Environmental Information
Tue Jan 5 2016



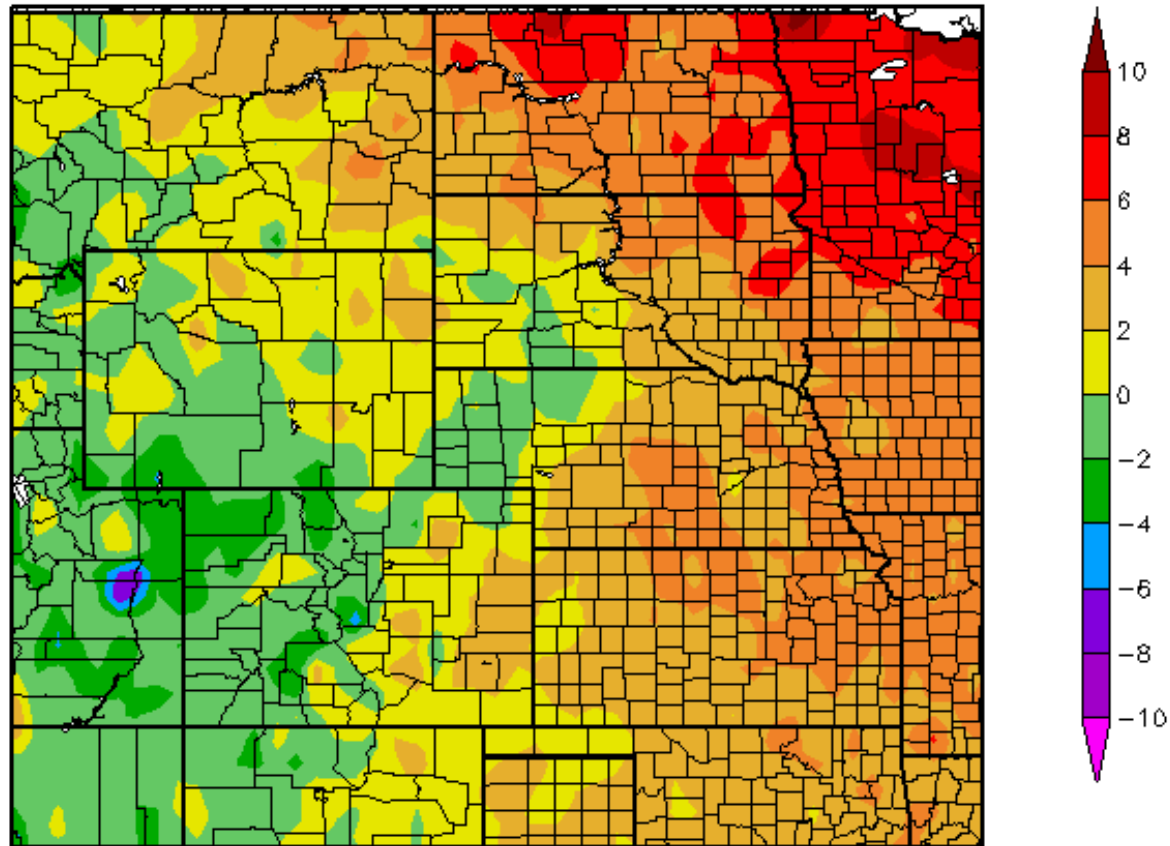
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Departure from Normal Temperature (F)
11/1/2015 - 1/31/2016



Generated 2/5/2016 at HPRCC using provisional data.

Regional Climate Centers



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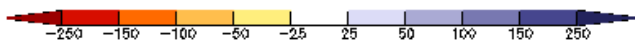
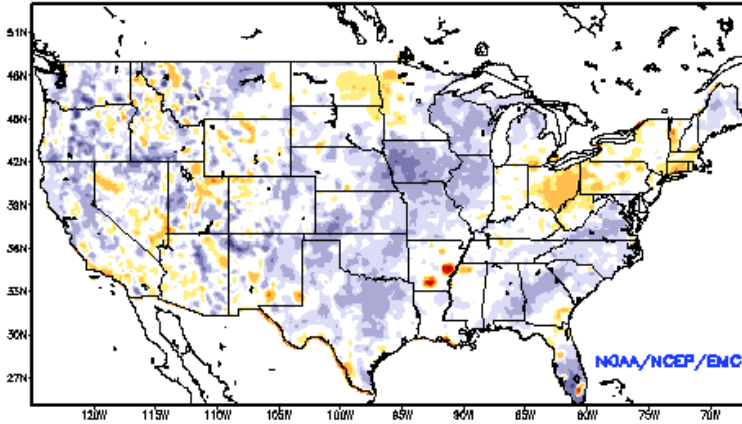


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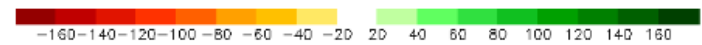
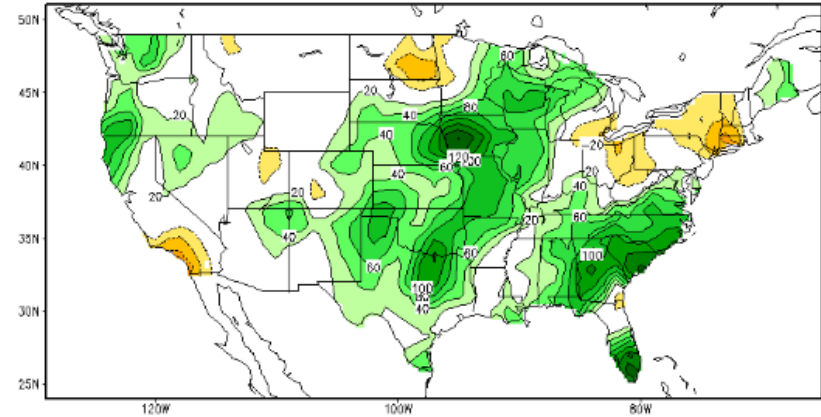


Modeled Soil Moisture

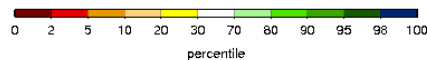
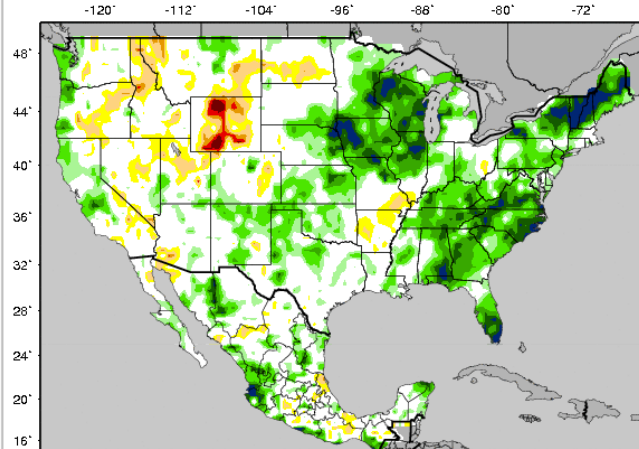
Ensemble-Mean - Current Total Column Soil Moisture Anomaly (mm)
NCEP NLDAS Products Valid: FEB 03, 2016



Calculated Soil Moisture Anomaly (mm)
FEB 06, 2016



VIC Soil Moisture Percentiles (wrt/ 1916-2004)
20160206



ation



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Current Mountain Snowpack

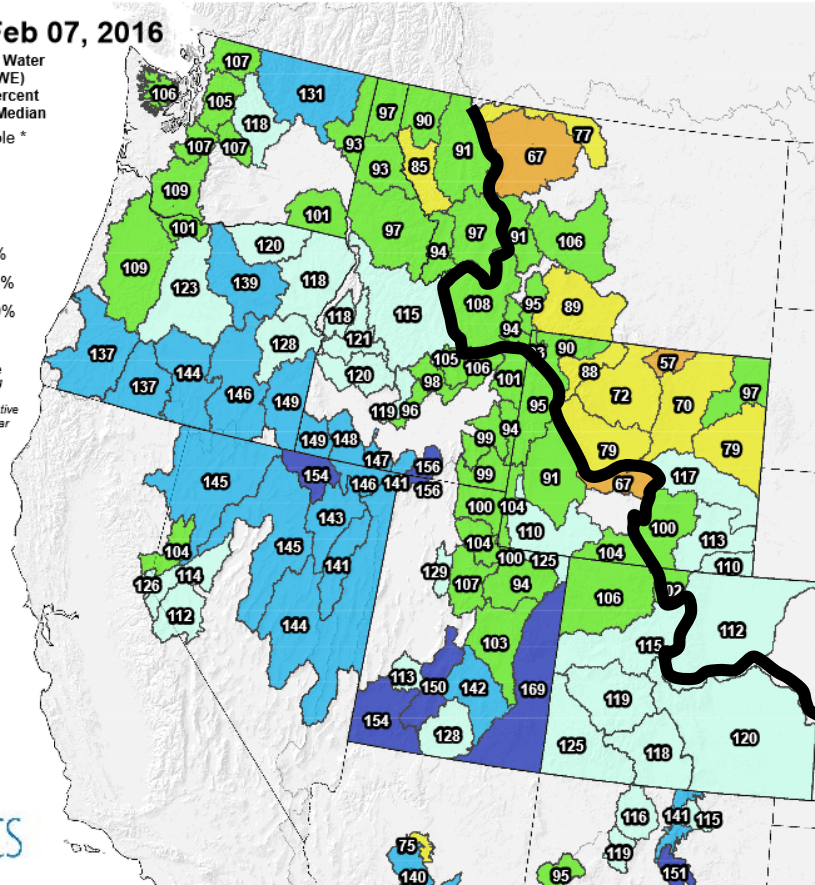
Westwide SNOTEL Current Snow Water Equivalent (SWE) % of Normal

Feb 07, 2016

Current Snow Water Equivalent (SWE) Basin-wide Percent of 1981-2010 Median

- unavailable *
- <50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- ≥ 150%

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



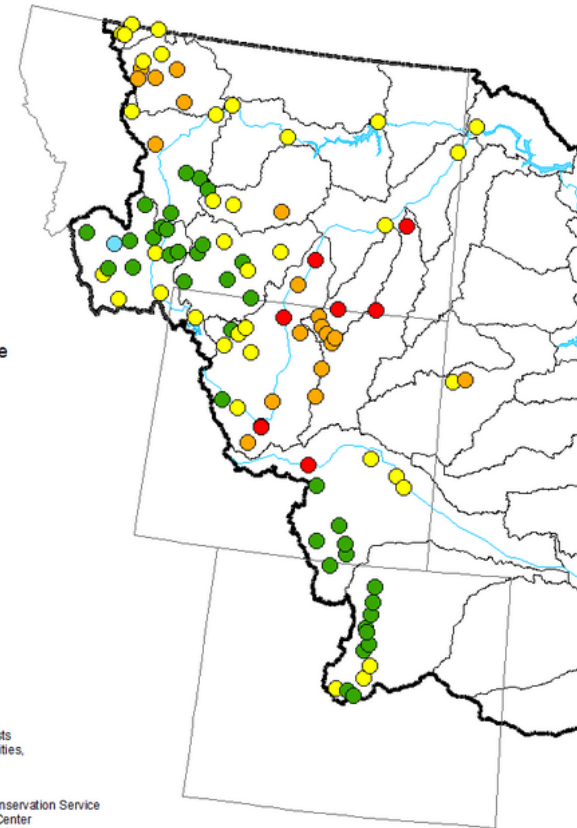
Missouri River Basin
Spring and Summer Streamflow Forecasts
as of February 1, 2016

Percent of 1981-2010 Average

- > 180
- 150 - 180
- 130 - 149
- 110 - 129
- 90 - 109
- 70 - 89
- 50 - 69
- 25 - 49
- < 25

50% exceedance probability forecasts shown. For forecasts at other exceedance probabilities, see individual state reports.

Prepared by:
USDA Natural Resources Conservation Service
National Water and Climate Center
Portland, Oregon
<http://www.wcc.nrcs.usda.gov>
Created: 4 Feb 2016 11:00



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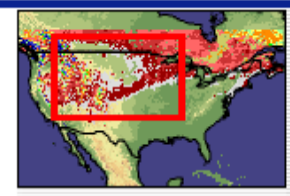
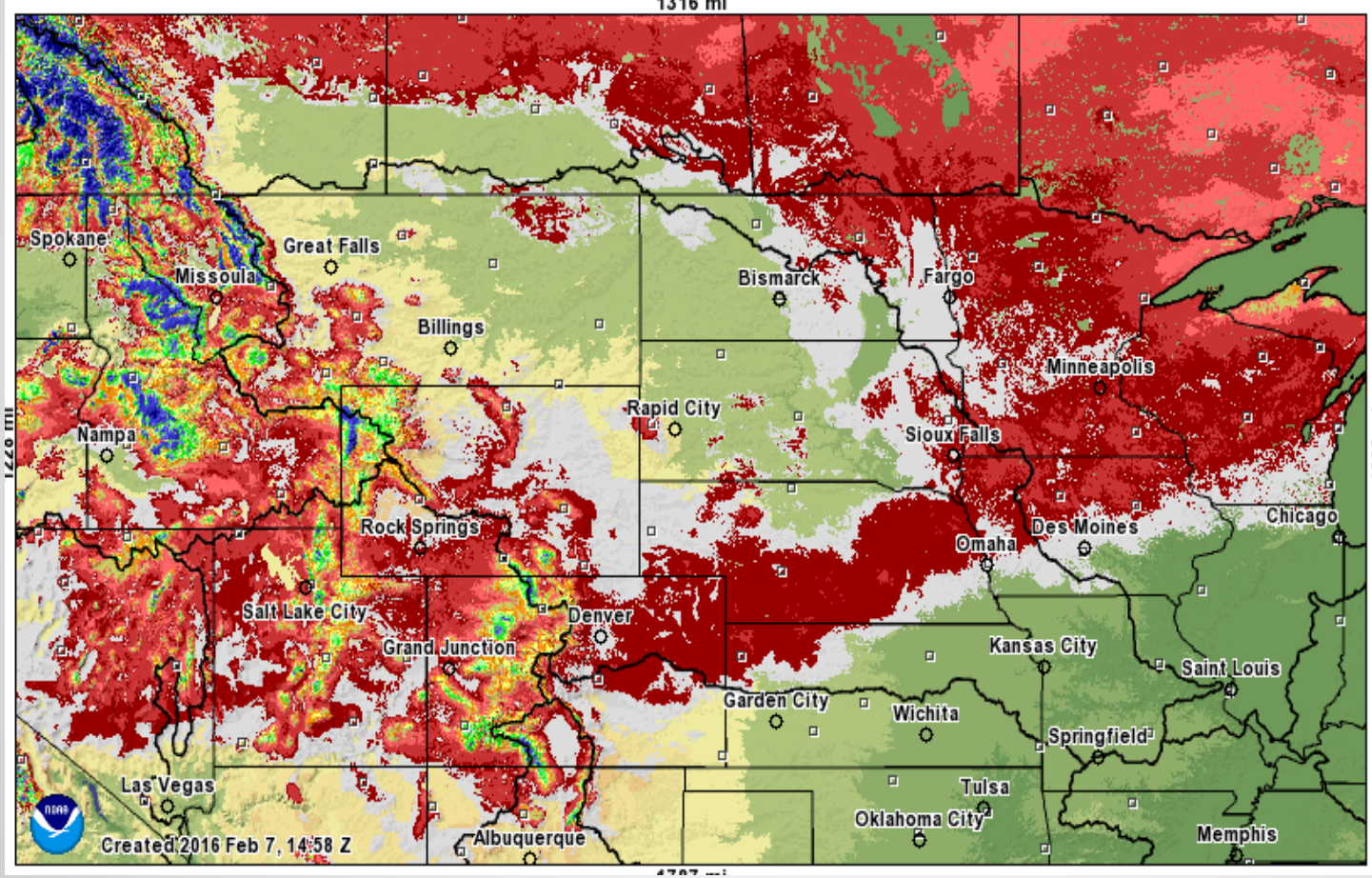


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Current Plains Snowpack

Modeled Snow Water Equivalent forecasted for 2016 February 8, 1:00 UTC
1316 mi



Inches of water equivalent

Dark Blue	> 30
Blue	20 to 30
Light Blue	18 to 20
Green	16 to 18
Light Green	14 to 16
Yellow-Green	12 to 14
Yellow	10 to 12
Orange	8 to 10
Light Orange	6 to 8
Red-Orange	4 to 6
Red	2 to 4
Dark Red	1 to 2
White	trace to 1

Not Estimated

Elevation in feet

White	> 13124
Light Yellow	8203 to 13124
Yellow	3281 to 8203
Green	3 to 3281
Dark Green	< 3

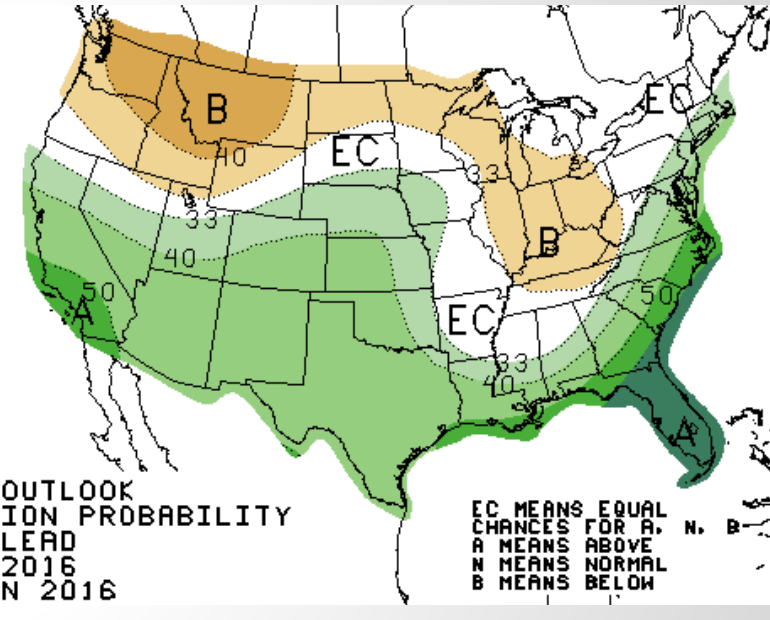
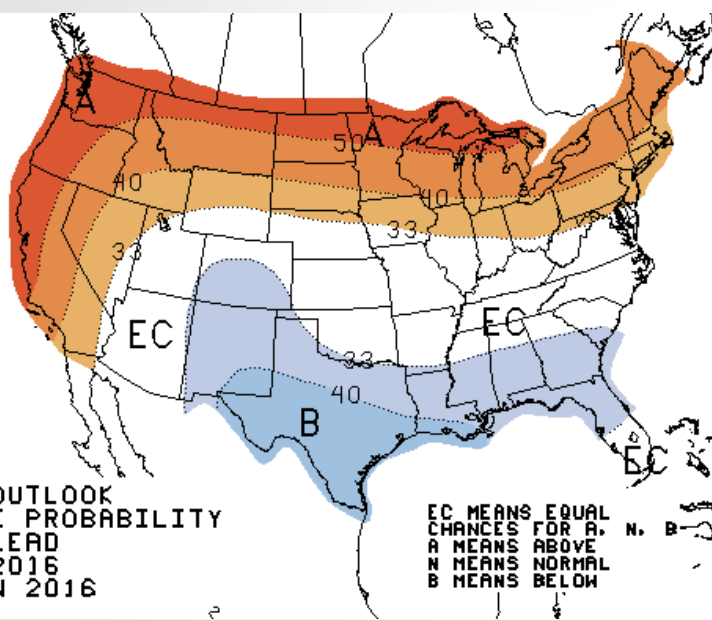




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CPC February T and P Outlooks

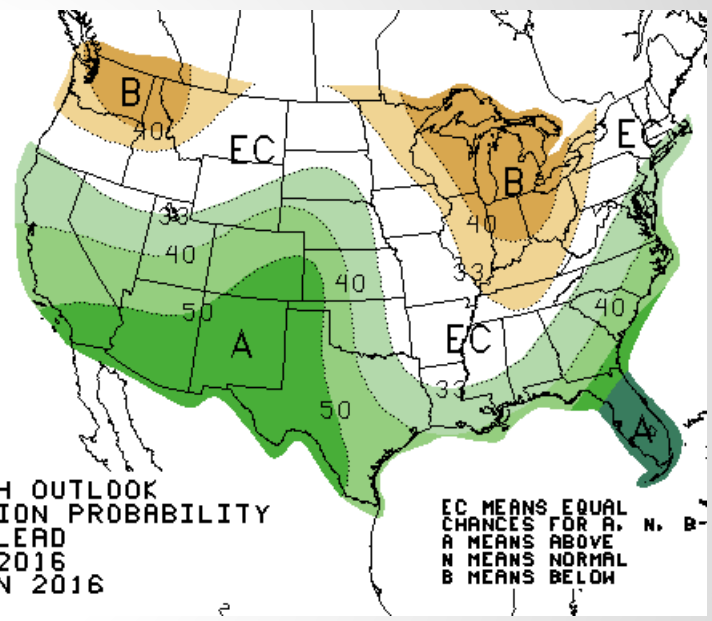
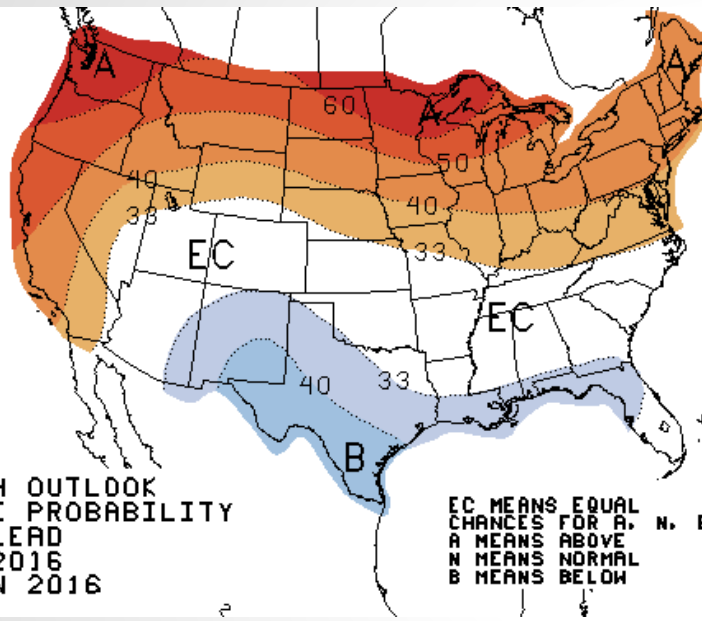




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CPC Feb-Mar-April T and P Outlooks

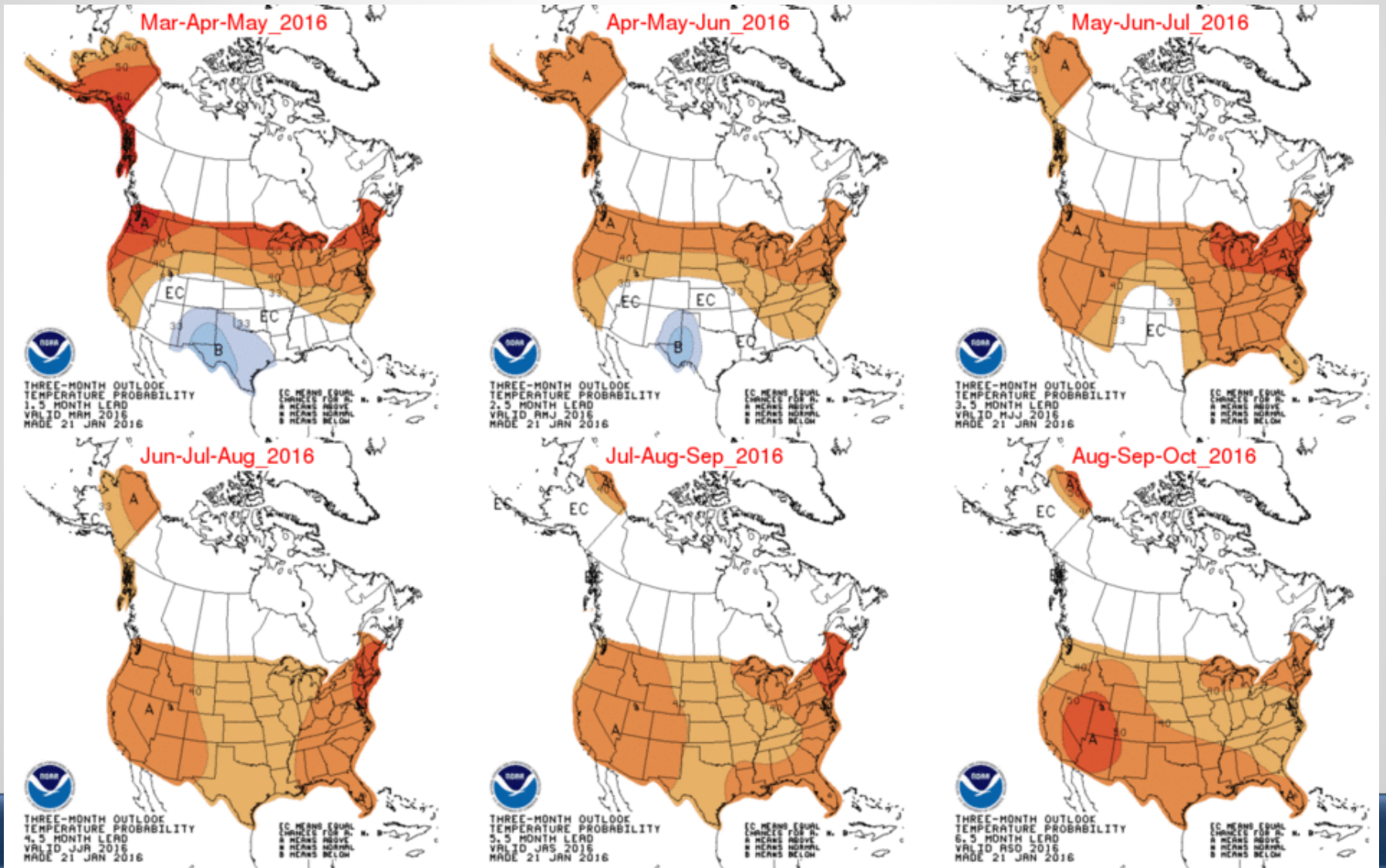




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CPC Really...really...long range Temps

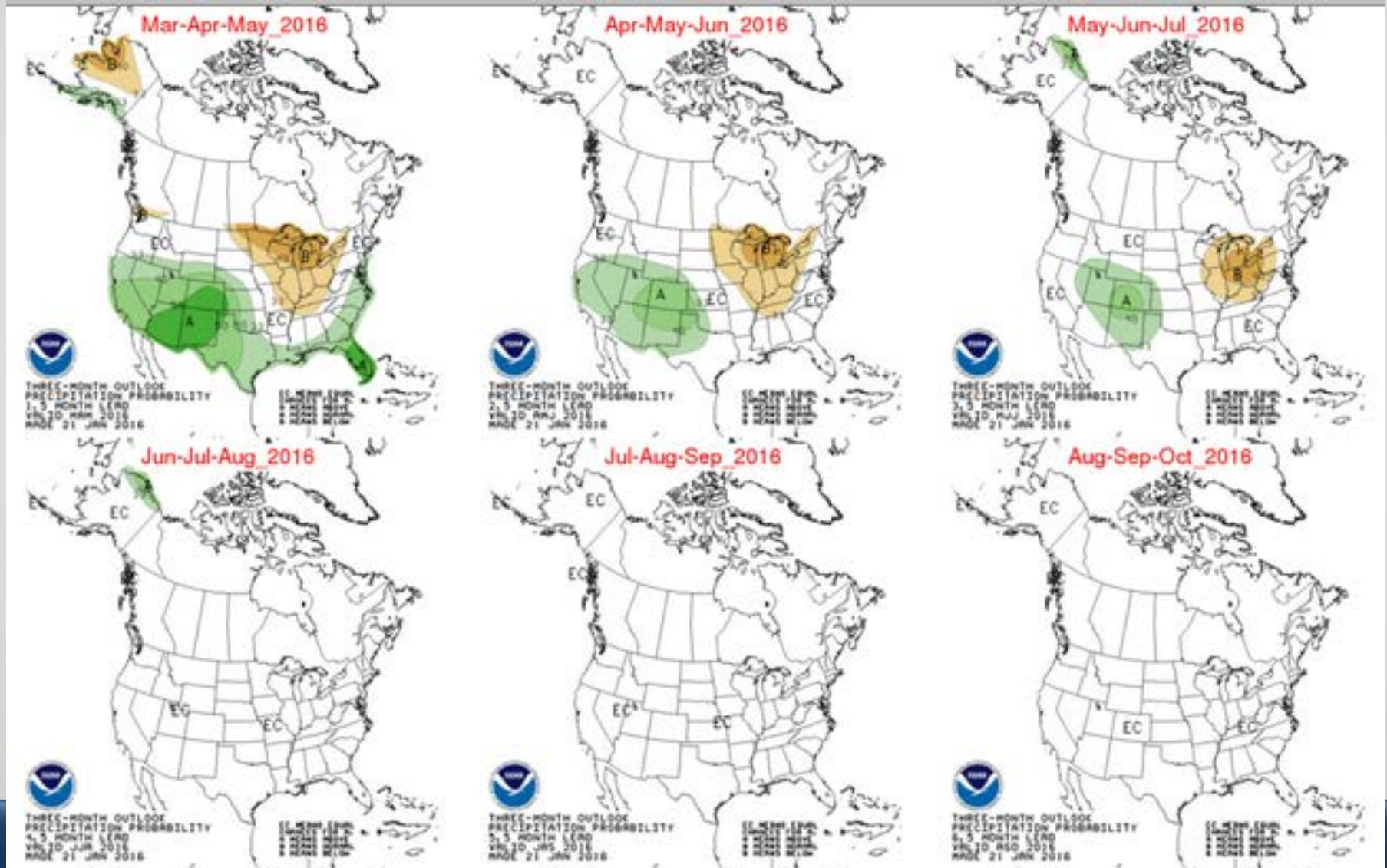




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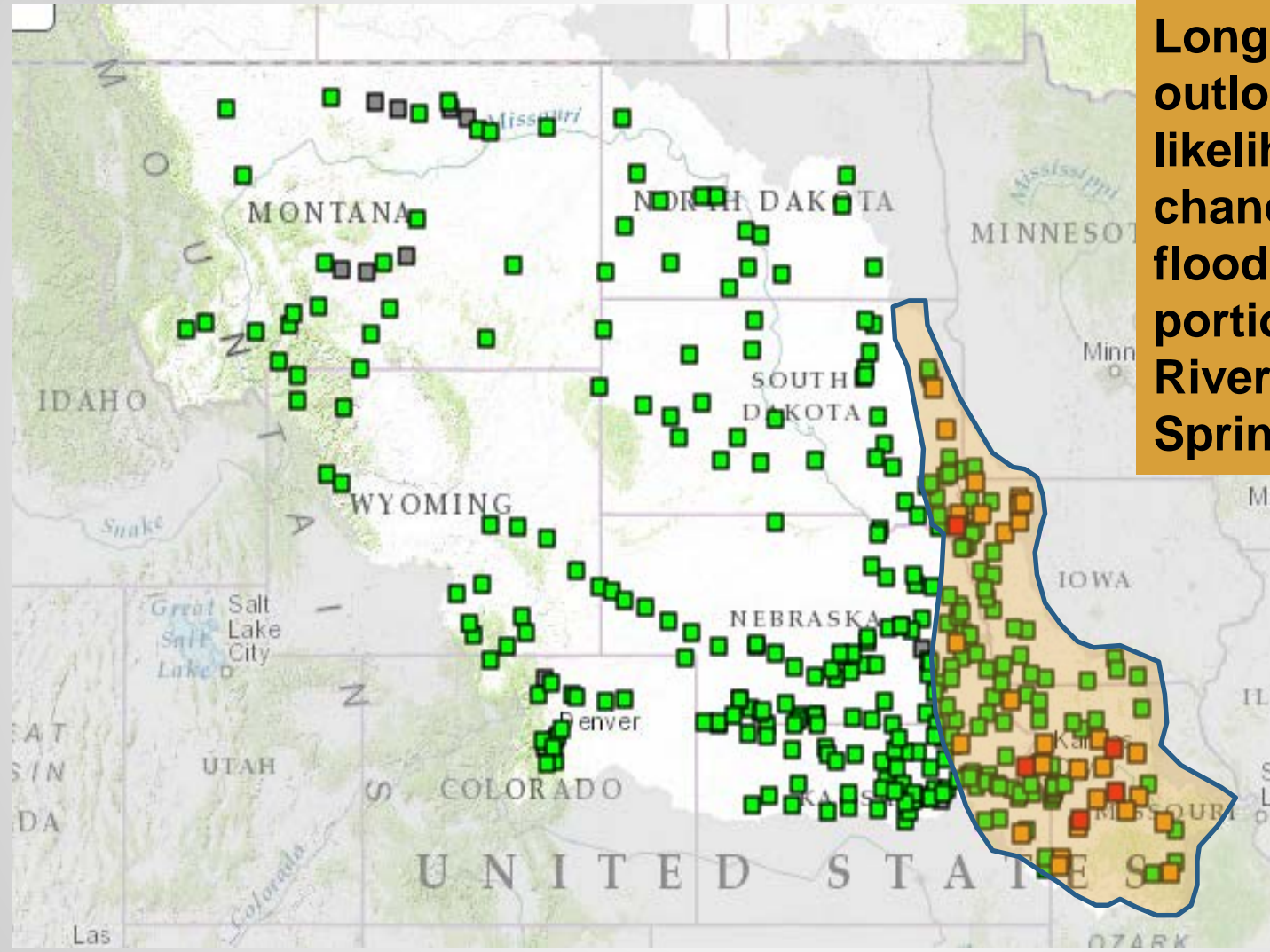


CPC Really...really...long range Precip





MISSOURI BASIN FLOOD POTENTIAL OUTLOOK



Long-range river outlooks indicate the likelihood (>50% chance) of tributary flooding in the eastern portion of the Missouri River basin this Spring.



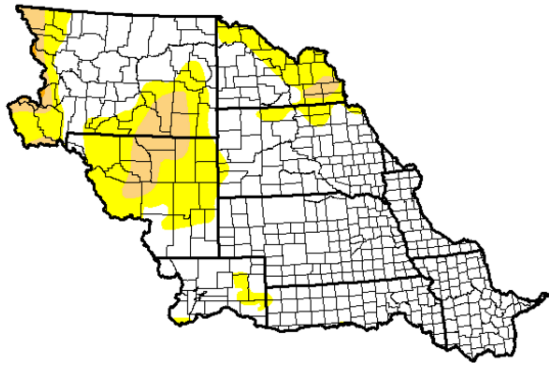


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Drought Update

U.S. Drought Monitor Missouri Watershed



February 2, 2016
(Released Thursday, Feb. 4, 2016)
Valid 7 a.m. EST

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	73.03	26.97	6.63	0.16	0.00	0.00
Last Week 1/26/2016	75.02	24.98	6.63	0.33	0.00	0.00
3 Months Ago 11/02/2015	58.15	41.85	10.60	2.60	0.11	0.00
Start of Calendar Year 1/2/2016	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 2/2/2015	76.51	23.49	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.

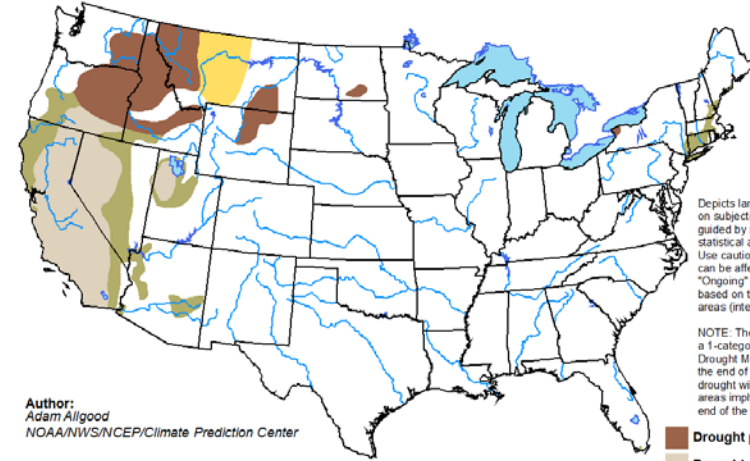
Author:
Anthony Artusa
NOAA/NWS/NCEP/CPC



<http://droughtmonitor.unl.edu/>

U.S. Seasonal Drought Outlook Drought Tendency During the Valid Period

Valid for January 21 - April 30, 2016
Released January 21, 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



<http://go.usa.gov/3eZ73>





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SUMMARY POINTS

- **It's been a warm Fall and Winter....looks like we will continue that trend.**
- **Northern Rockies snowpack is below normal, Platte System is a bit above. NRCS Water Supply Forecasts indicate below average mountain runoff.**
- **New plains snowpack Colorado, through Nebraska, into northwest Iowa....1 to 2 inches liquid equivalent. Wildcard.**
- **Several rounds of rain-driven flooding (centered on state of Missouri) have already occurred since November. Soils in eastern half of the basin are wet.**
- **Latest flood potential runs indicate Springtime tributary flooding in eastern quarter of the basin likely (but this is not atypical).**
- **NWS will issue first Spring Flood Outlook on Thursday, February 18th**





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For Further Information...

- <https://www.climate.gov/enso> for one-stop all-things ENSO
- <https://attendee.gotowebinar.com/register/7395763081104006913> for Missouri Basin—specific, monthly climate outlook webinars
- <http://www.hprcc.unl.edu/webinars.php> for recorded past webinars
- <http://www.cpc.ncep.noaa.gov/> for multi-month T and P outlooks
- http://water.weather.gov/ahps/long_range.php for flood potential

