

Great Plains and Midwest Climate Outlook February 19, 2015

Brian Fuchs
Climatologist

National Drought Mitigation
Center
University of Nebraska-Lincoln
bfuchs2@unl.edu
402-472-6775



(Scott Olson/Getty Images)



General Information

▶ Providing climate services to the Central Region

- Collaboration Activity Between:
- Collaboration with Dennis Todey (South Dakota State Climatologist), Jim Angel (Illinois State Climatologist), Doug Kluck and John Eise (NOAA), State Climatologists and the Midwest Regional Climate Center, High Plains Regional Climate Center, NOAAs Climate Prediction Center, Iowa State University, Brian Fuchs (National Drought Mitigation Center)

▶ Next Climate/Drought Outlook Webinar

- March 19, 2015 with Dennis Todey (South Dakota State Climatologist)

▶ Access to Future Climate Webinars and Information

- ▶ <http://www.drought.gov/drought/content/regional-programs/regional-drought-webinars>

▶ Past recorded presentations and slides can be found here:

- ▶ <http://mrcc.isws.illinois.edu/webinars.htm>

- ▶ <http://www.hprcc.unl.edu/webinars.php>

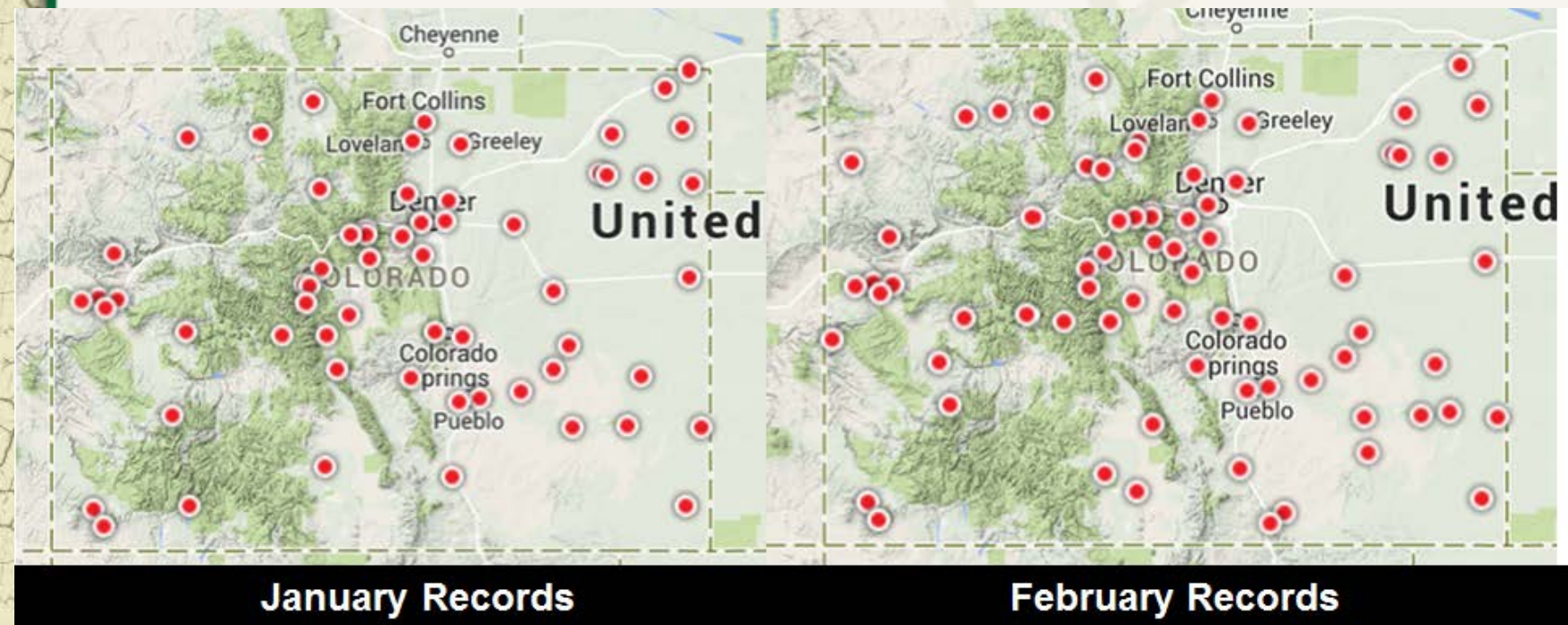
▶ There will be time for questions at the end



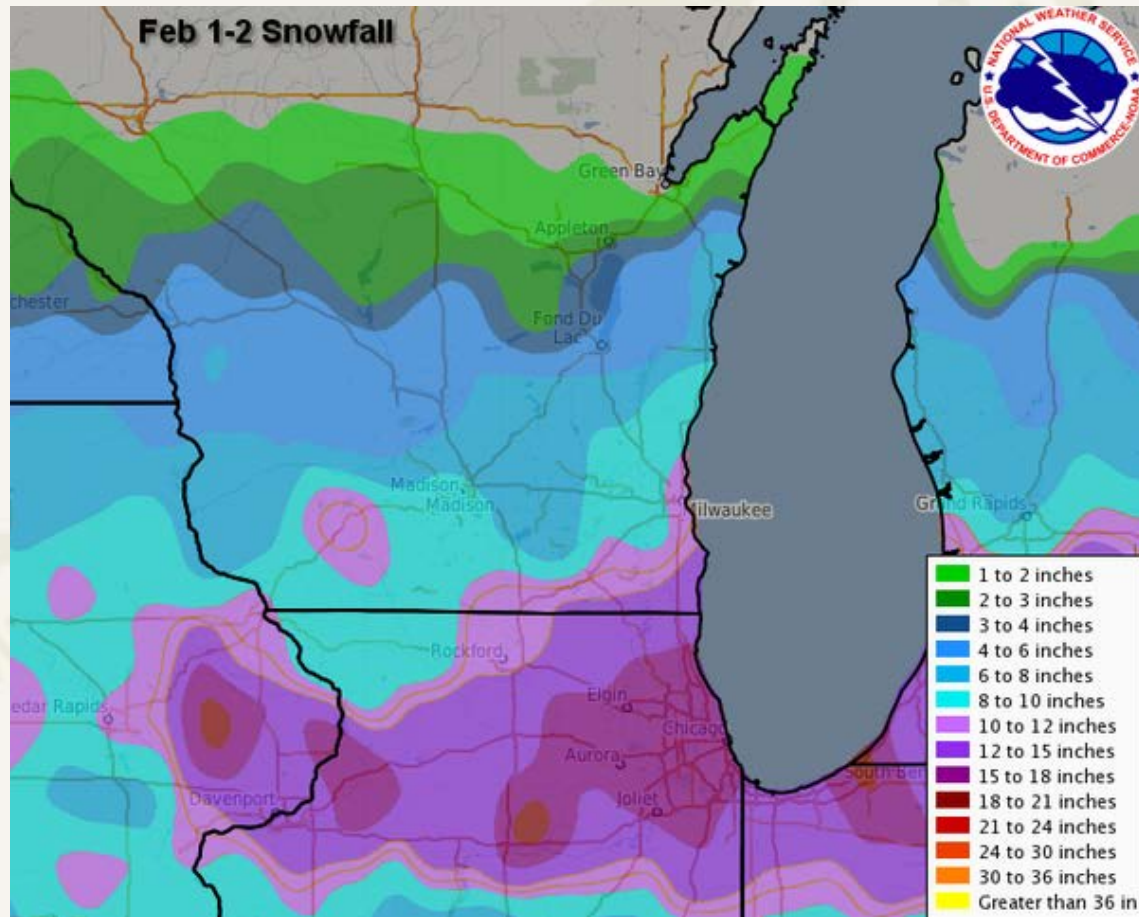
Agenda

- ▶ Current Conditions
- ▶ Regional Climate Updates
- ▶ Outlooks

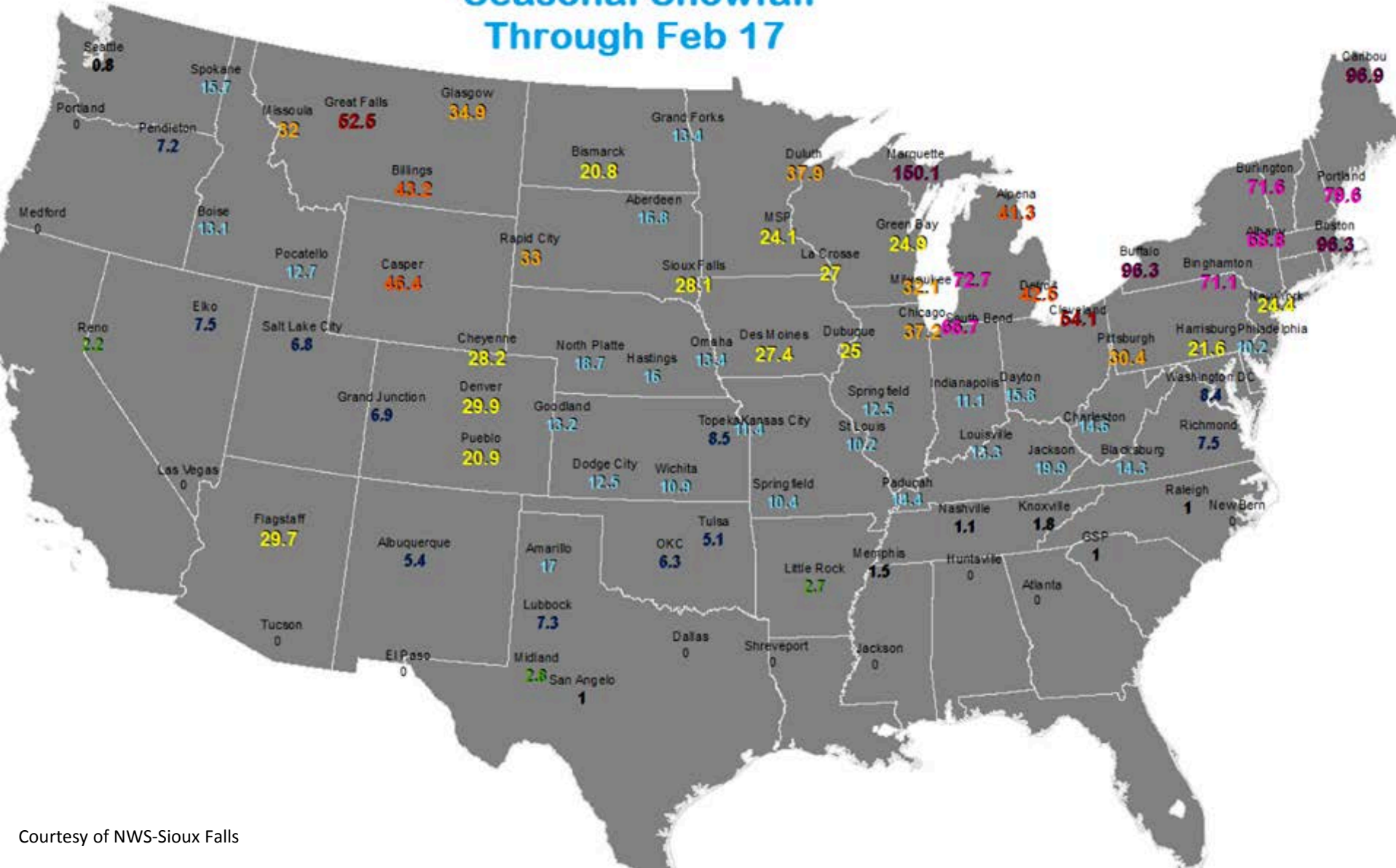
Colorado Tmax Temperature Records



Current Conditions



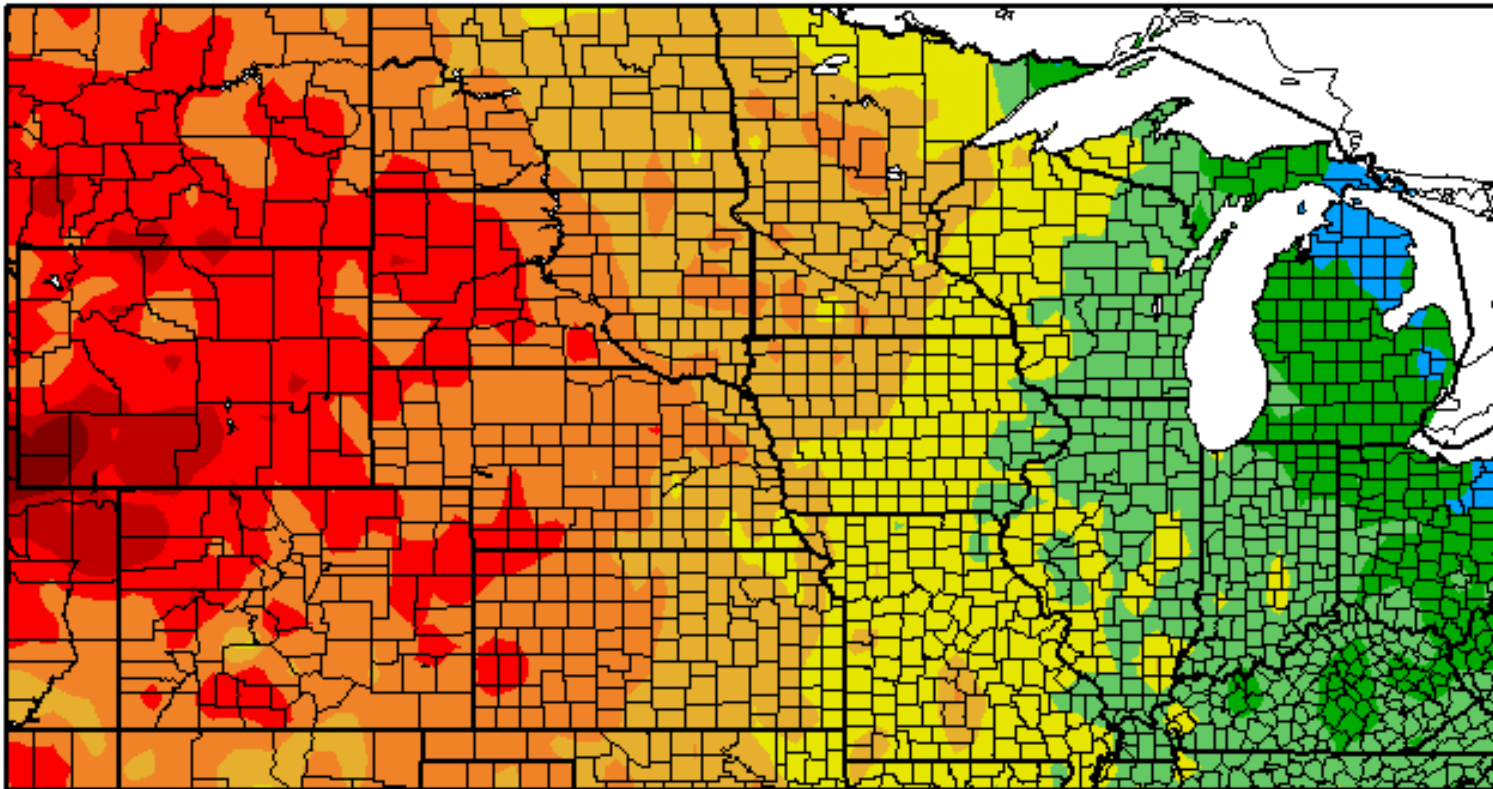
Seasonal Snowfall Through Feb 17



Courtesy of NWS-Sioux Falls

30-Day Temperature Departure

Departure from Normal Temperature (F)
1/19/2015 - 2/17/2015



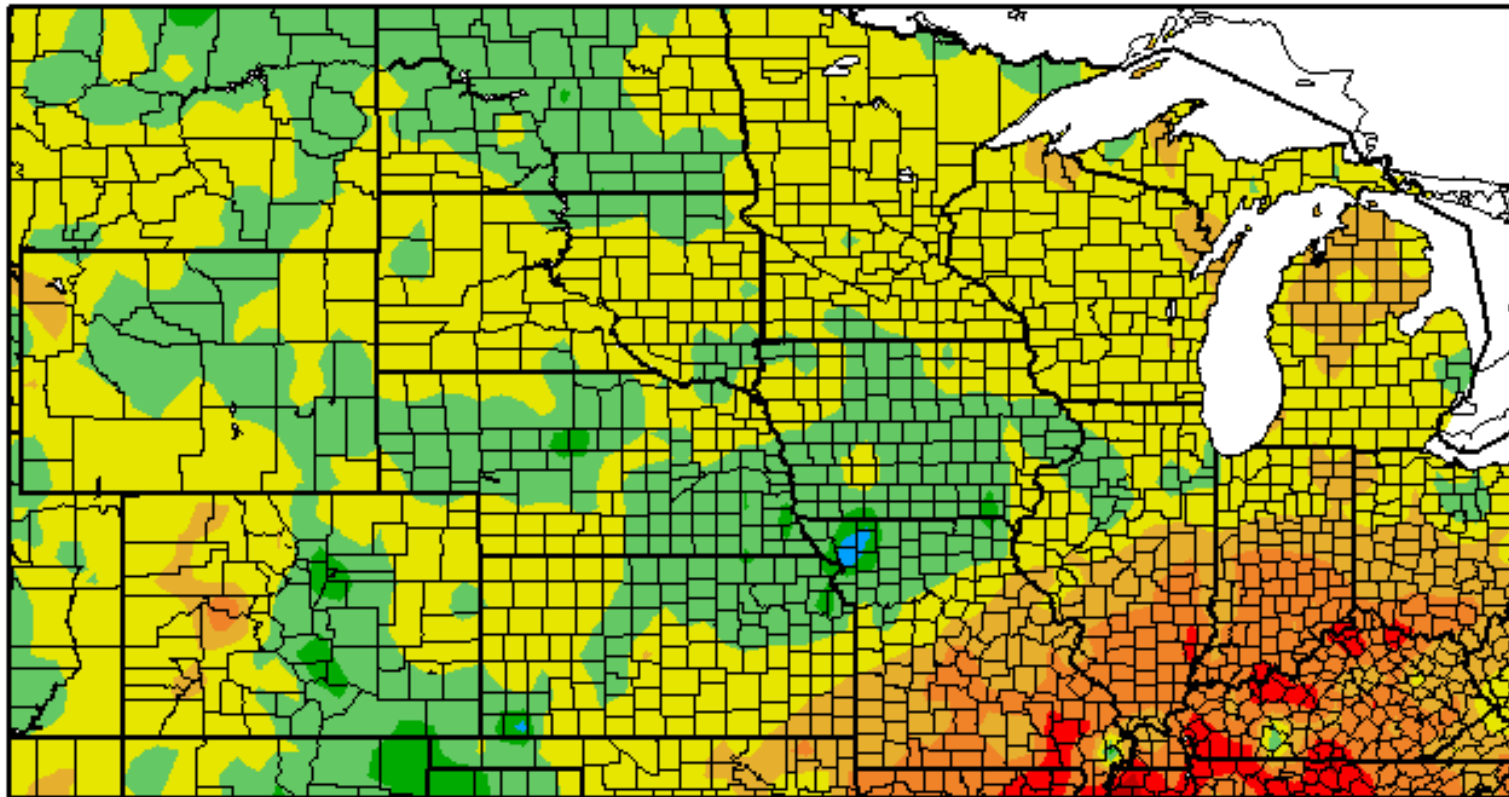
Generated 2/18/2015 at HPRCC using provisional data.

Regional Climate Centers



30-Day Precipitation Departure

Departure from Normal Precipitation (in)
1/19/2015 - 2/17/2015



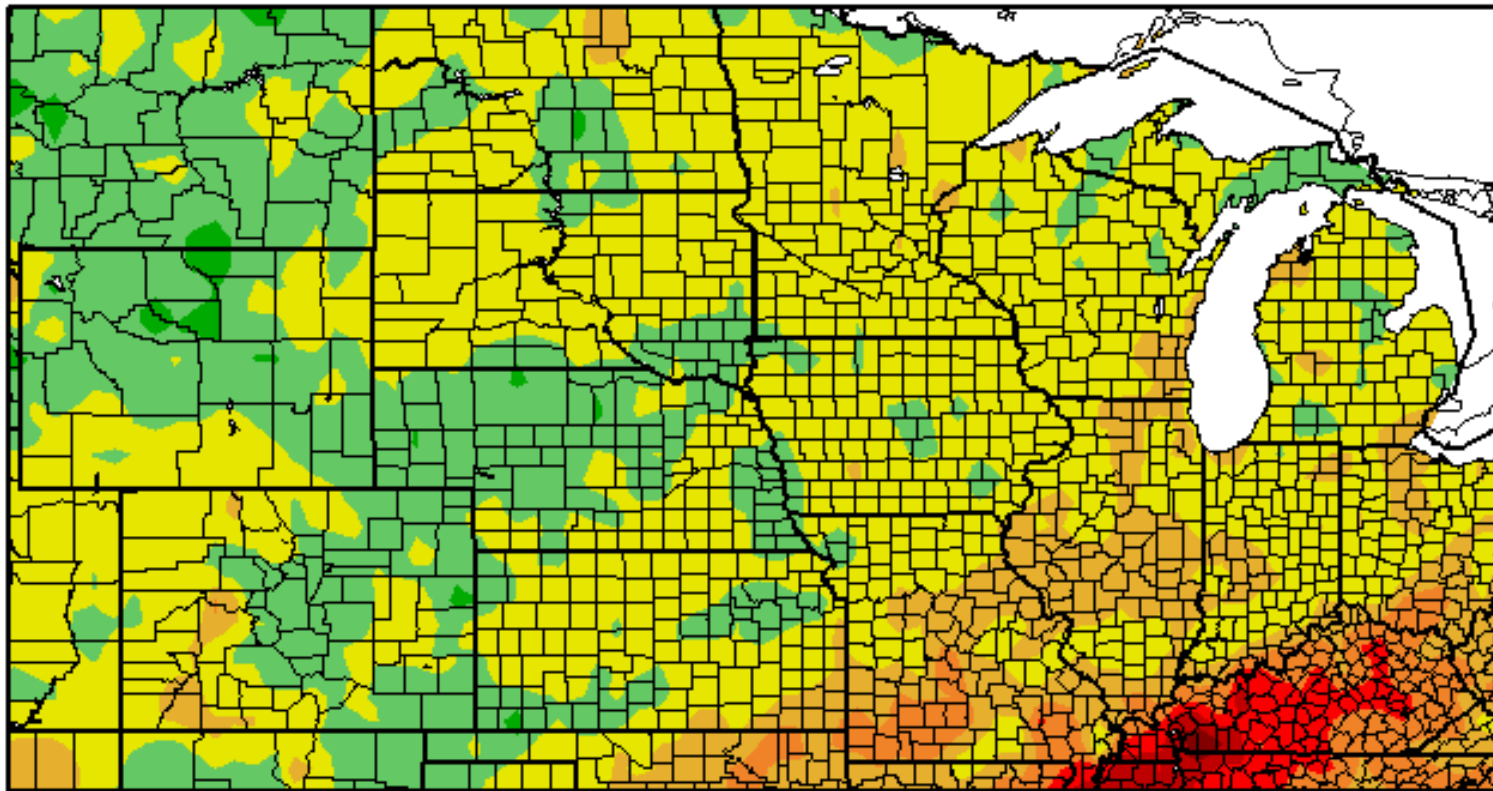
Generated 2/18/2015 at HPRCC using provisional data.

Regional Climate Centers



90-Day Precipitation Departure

Departure from Normal Precipitation (in)
11/20/2014 – 2/17/2015



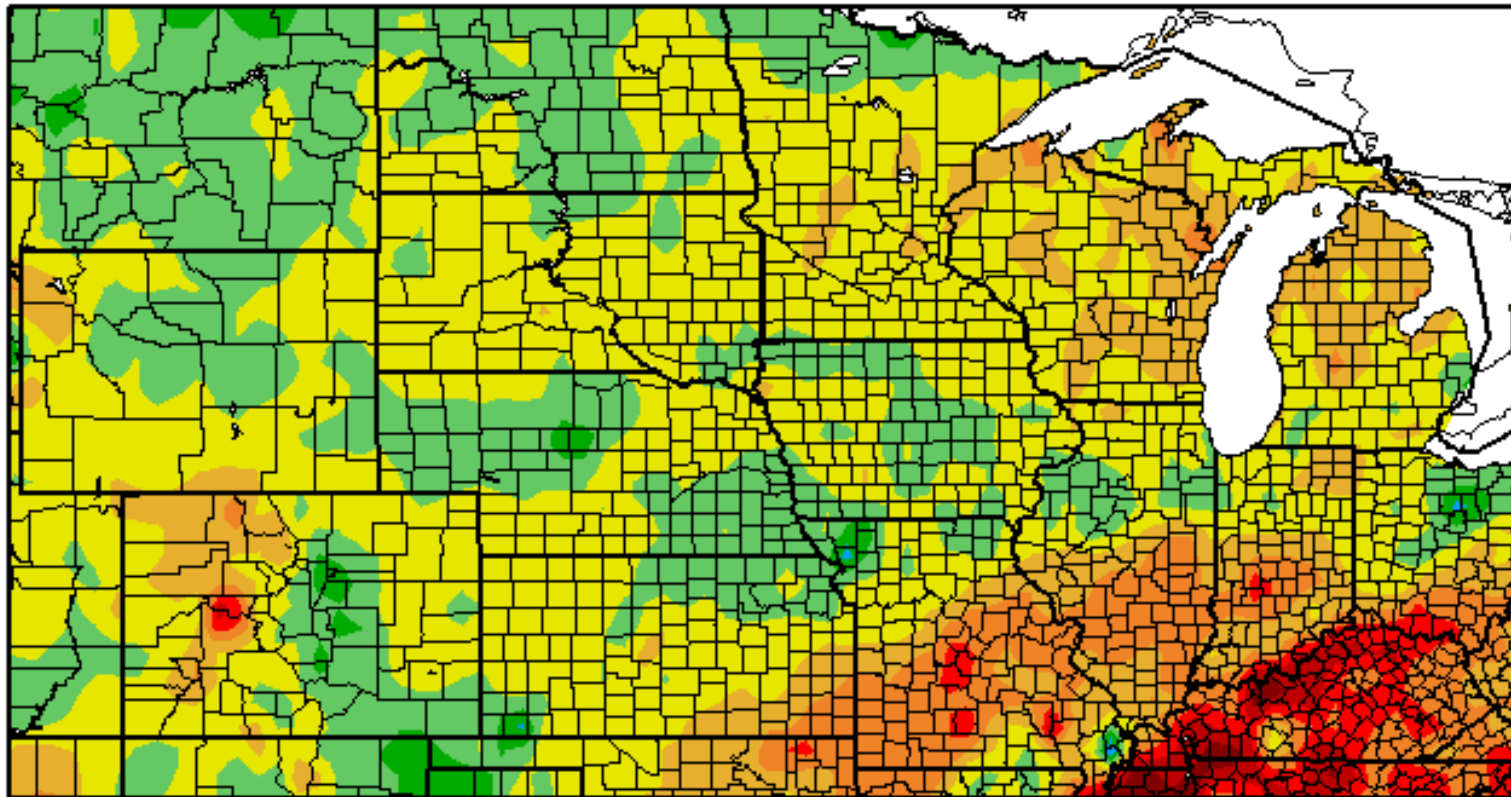
Generated 2/18/2015 at HPRCC using provisional data.

Regional Climate Centers



Year to Date Precipitation

Departure from Normal Precipitation (in)
1/1/2015 - 2/17/2015



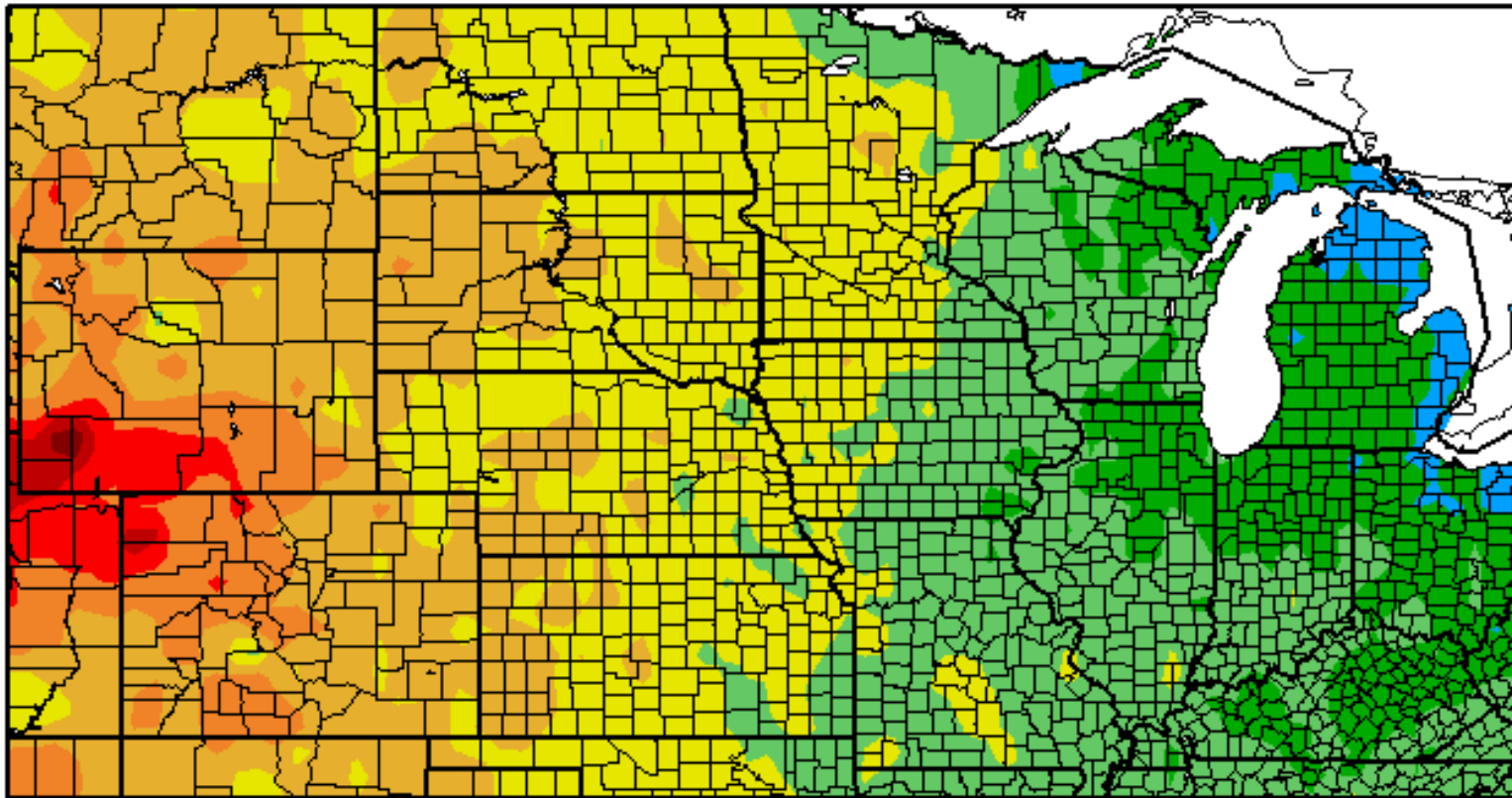
Generated 2/18/2015 at HPRCC using provisional data.

Regional Climate Centers



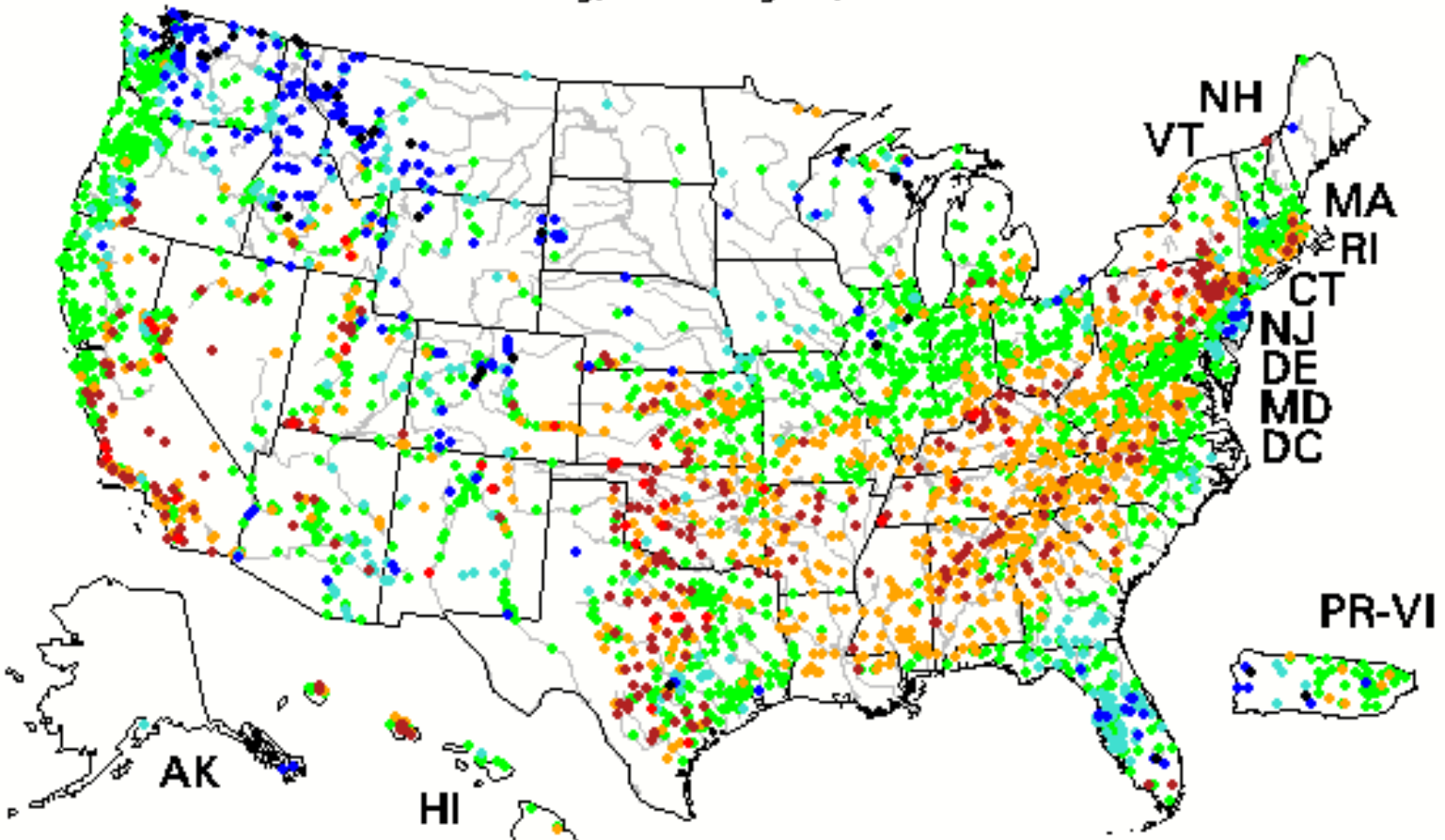
Year to Date Temperature

Departure from Normal Temperature (F)
1/1/2015 - 2/17/2015



28-Day Average Streamflow

Monday, February 16, 2015



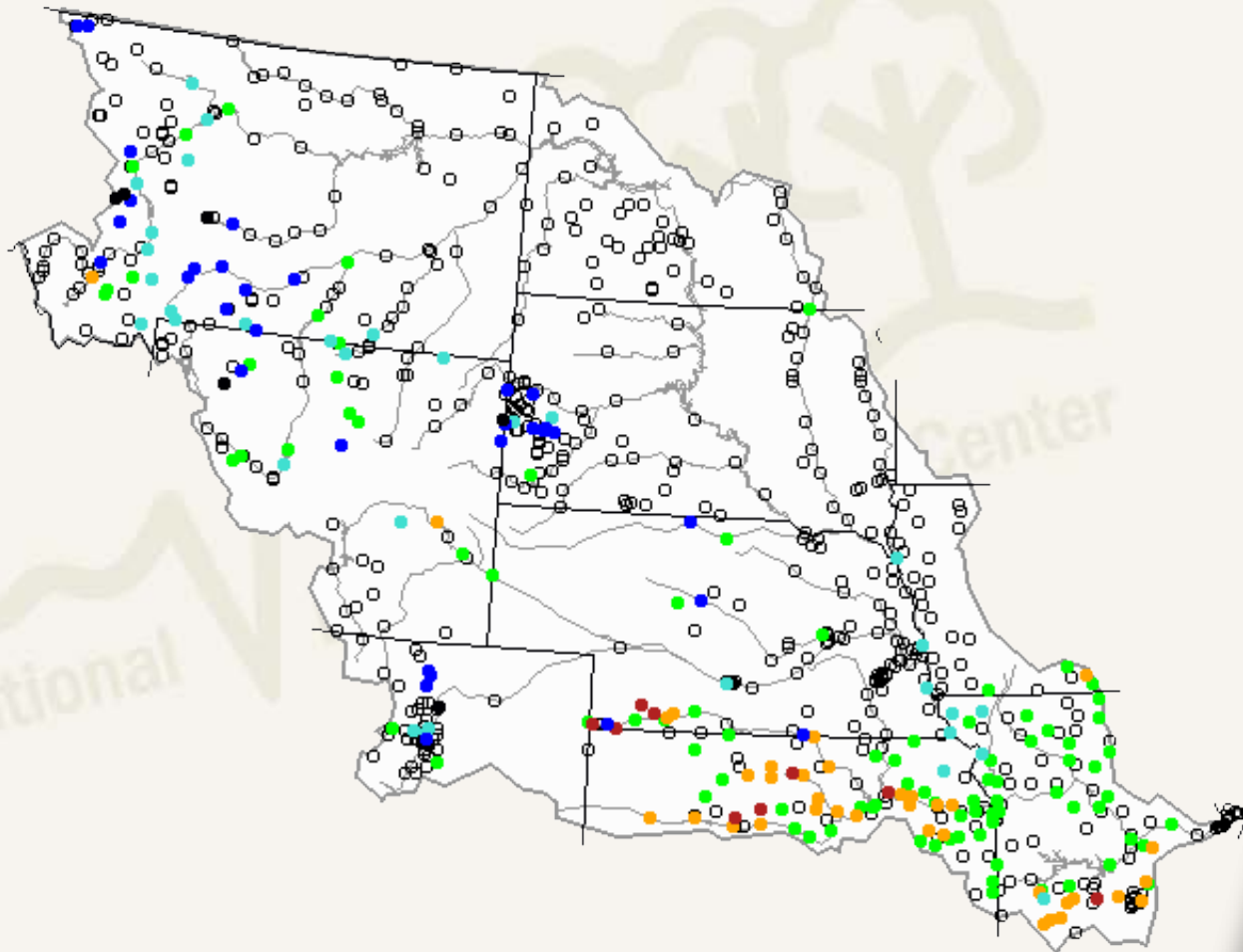
<http://waterwatch.usgs.gov/>

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



28-Day Average Streamflow

Monday, February 16, 2015

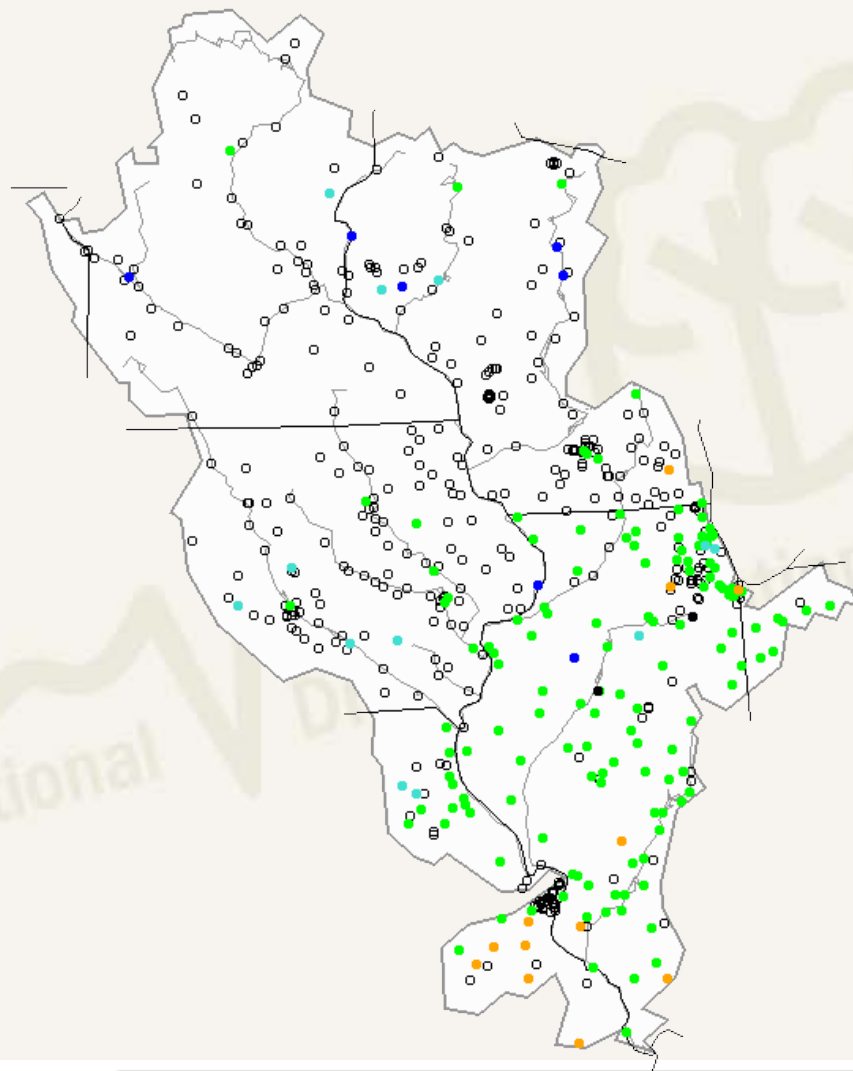


Explanation - Percentile classes						
Low	<10	10-24	25-75	76-90	>90	High
	Much below normal	Below normal	Normal	Above normal	Much above normal	










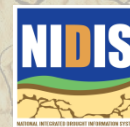
28-Day Average Streamflow

Monday, February 16, 2015



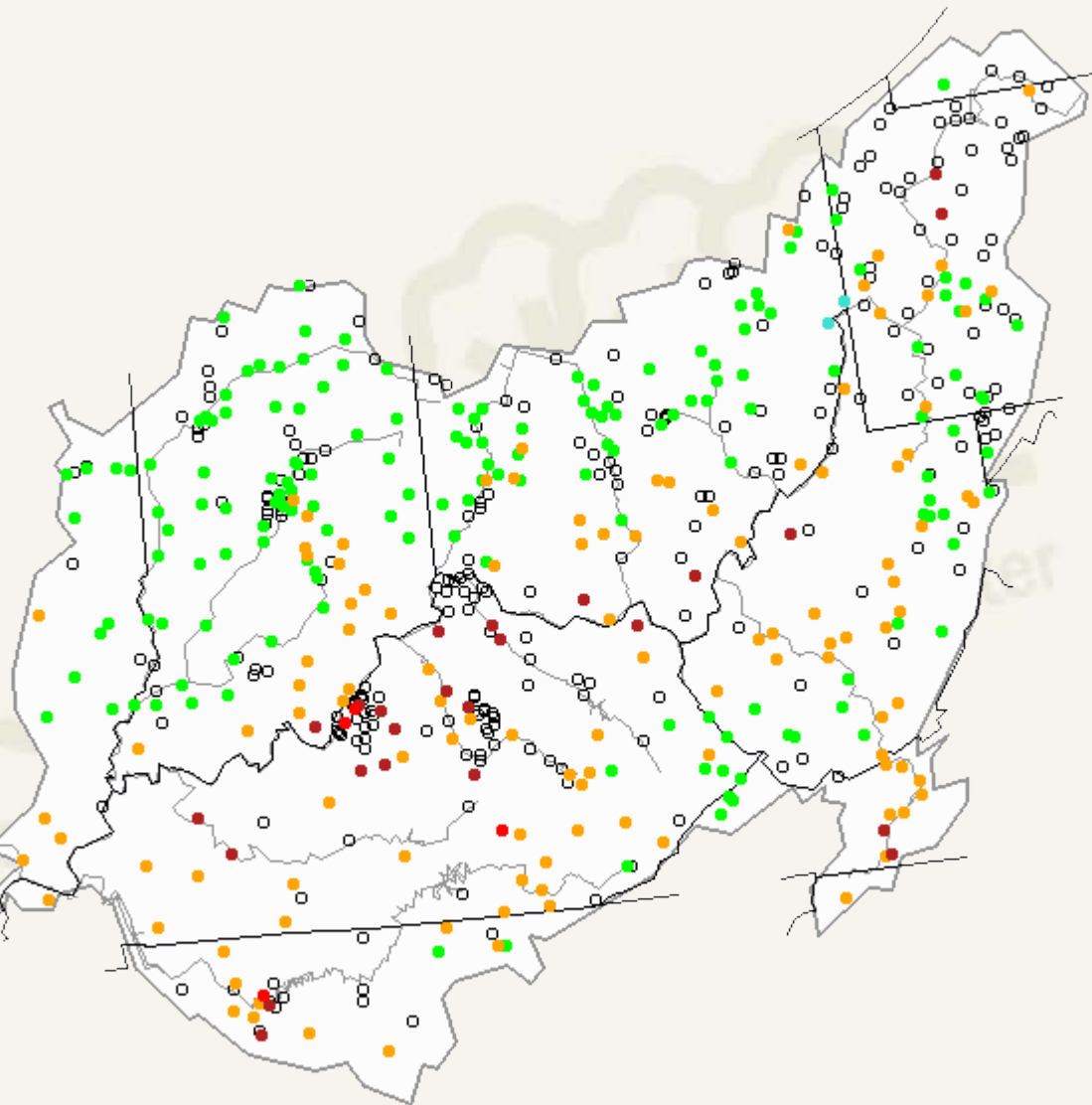
Explanation - Percentile classes

							
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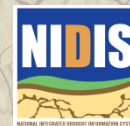


28-Day Average Streamflow

Monday, February 16, 2015

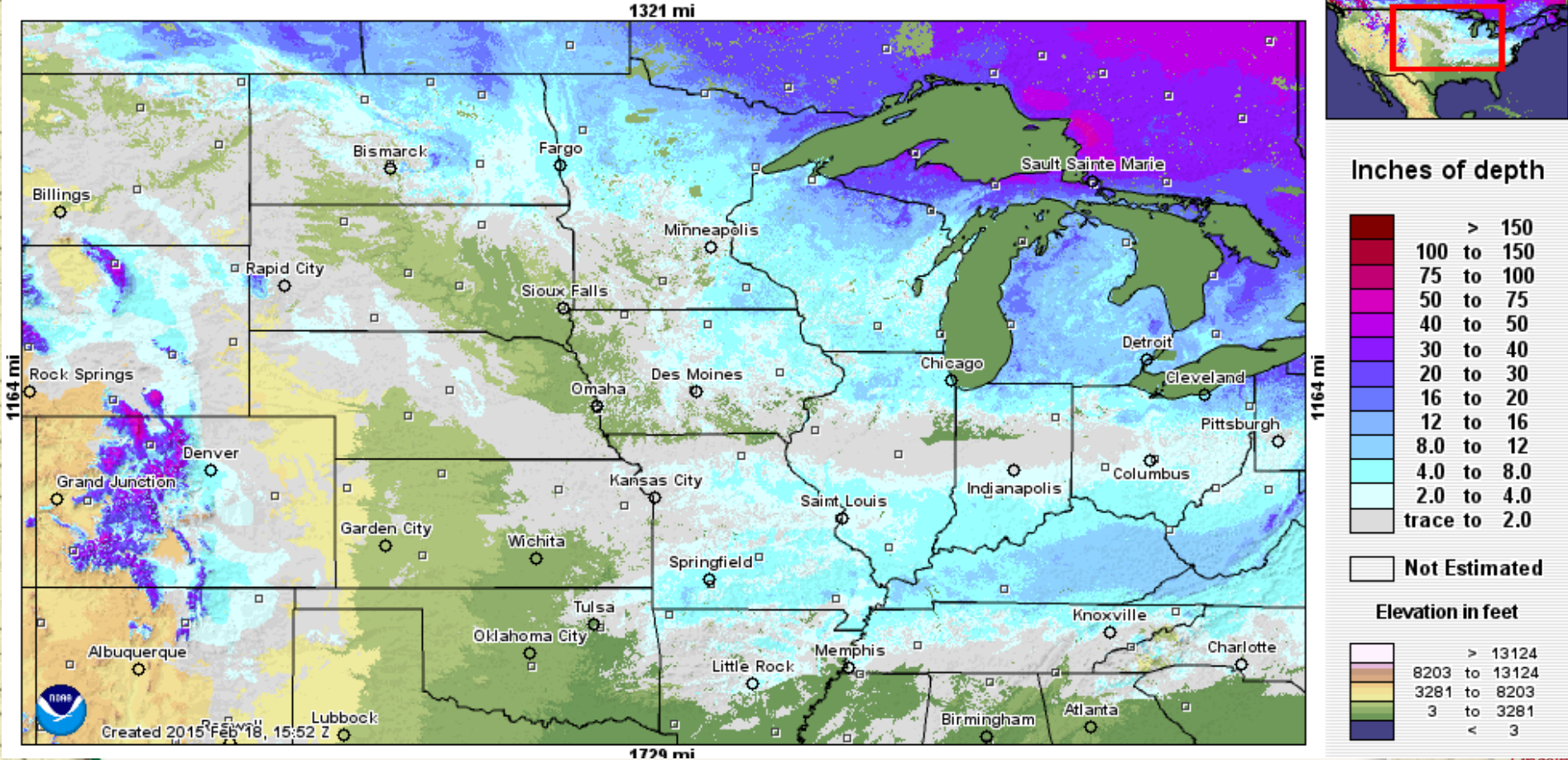


Explanation - Percentile classes						
Low	<10	10-24	25-75	76-90	>90	High
	Much below normal	Below normal	Normal	Above normal	Much above normal	



Current Snow Cover

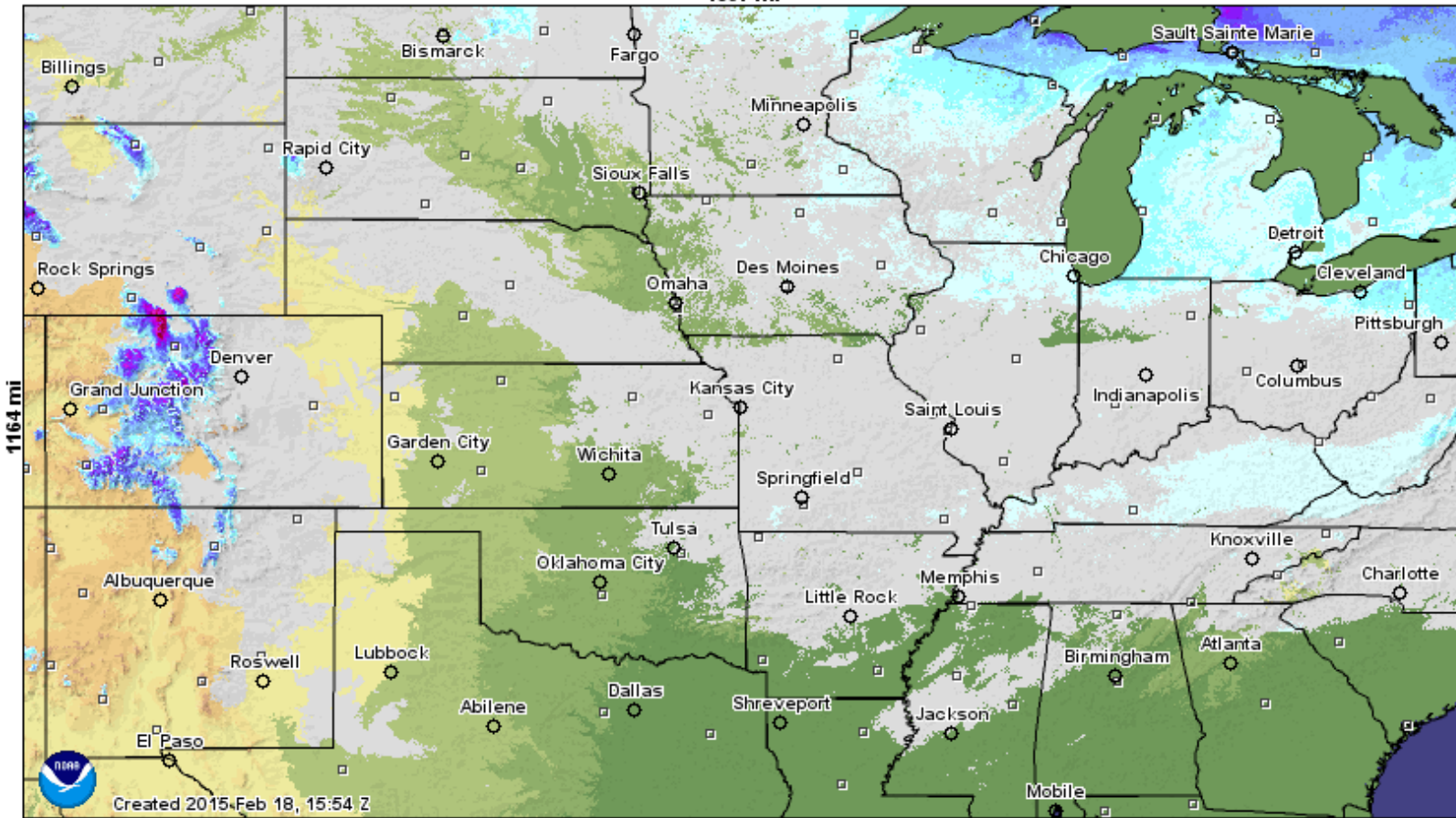
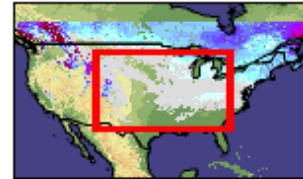
Modeled Snow Depth forecasted for 2015 February 18, 16:00 UTC



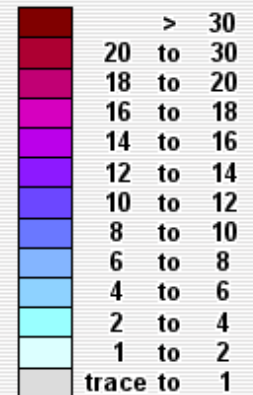
<http://http://www.nohrsc.noaa.gov/interactive/html/map.html?>

Snow Water Equivalent

Modeled Snow Water Equivalent forecasted for 2015 February 18, 16:00 UTC
1397 mi

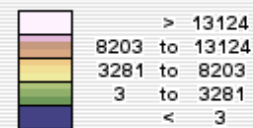


Inches of water equivalent



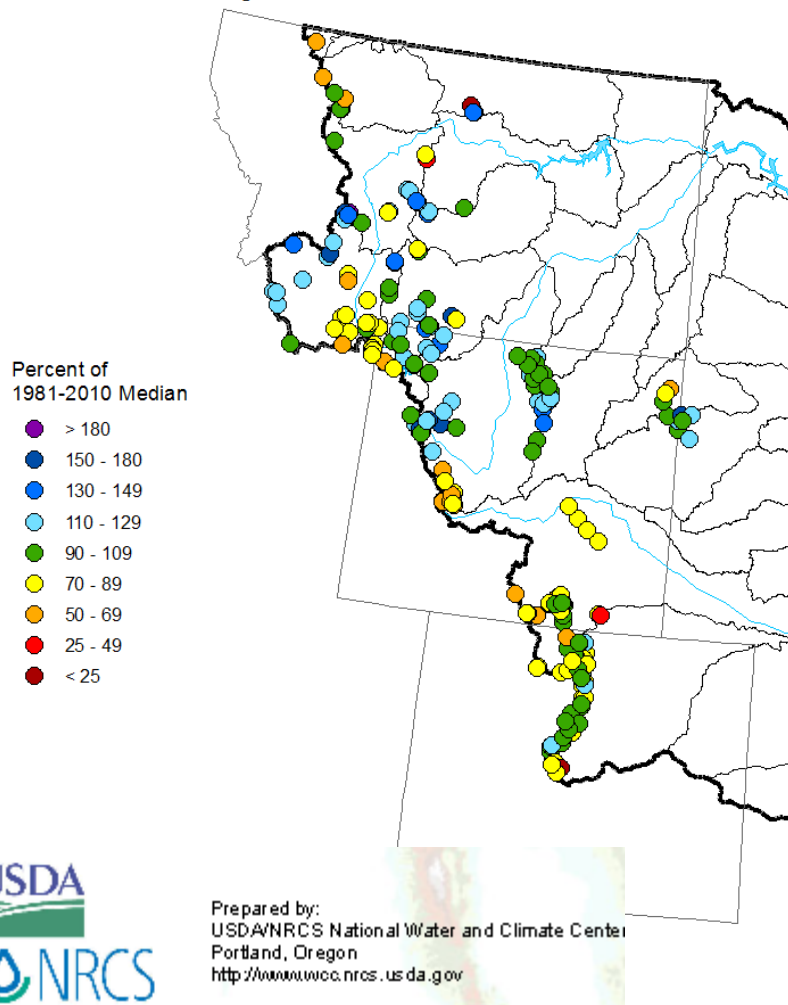
Not Estimated

Elevation in feet

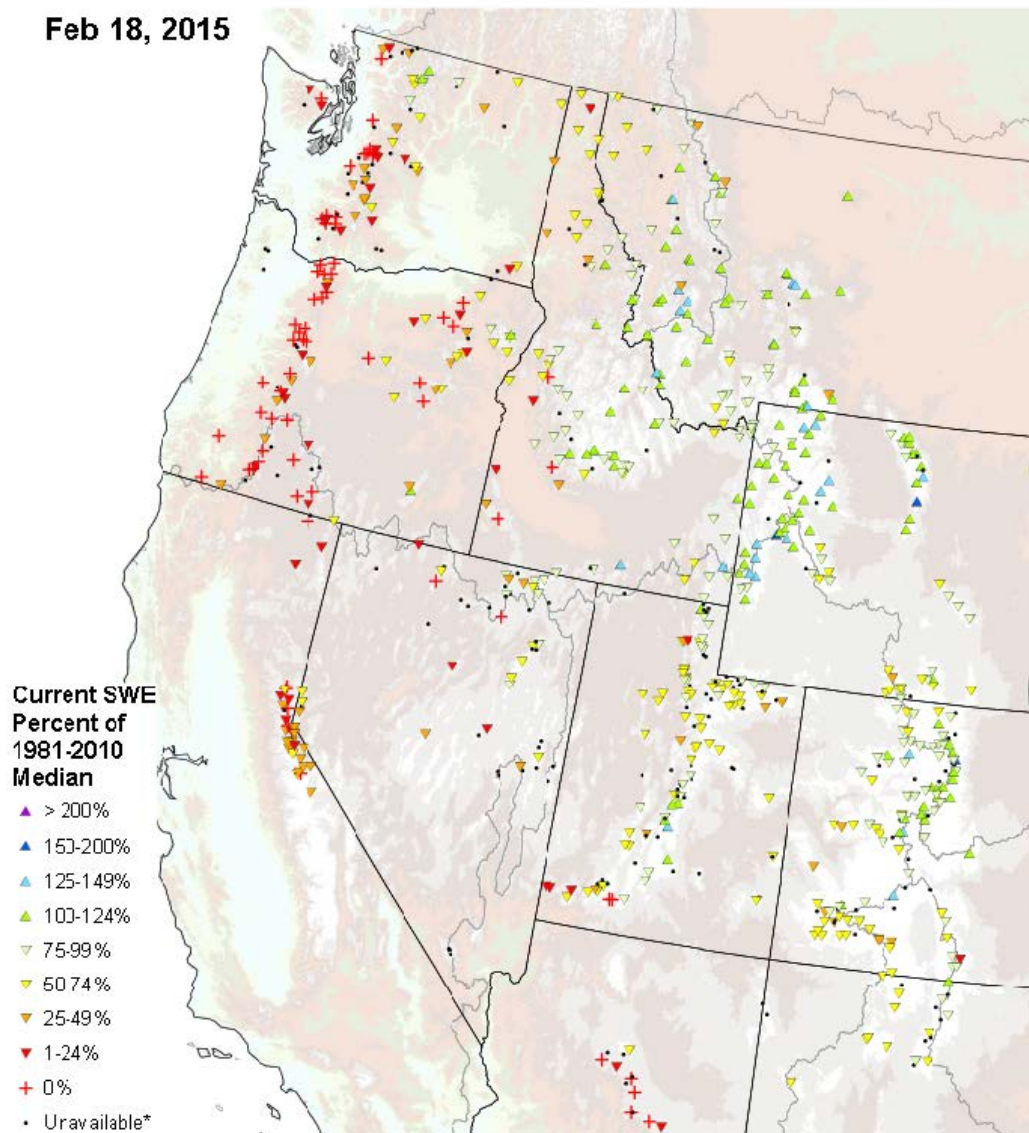


Western Snowpack

Missouri River Basin Mountain Snowpack as of February 1, 2015



SNOTEL Current Snow Water Equivalent (SWE) Percent of Normal Feb 18, 2015

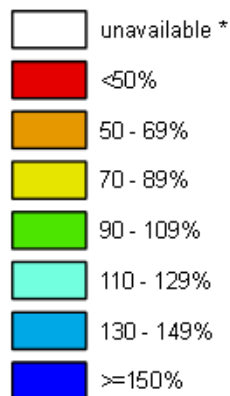


Colorado SNOTEL Current Snow Water Equivalent (SWE) % of Normal

Feb 18, 2015

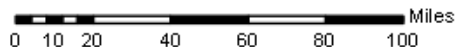
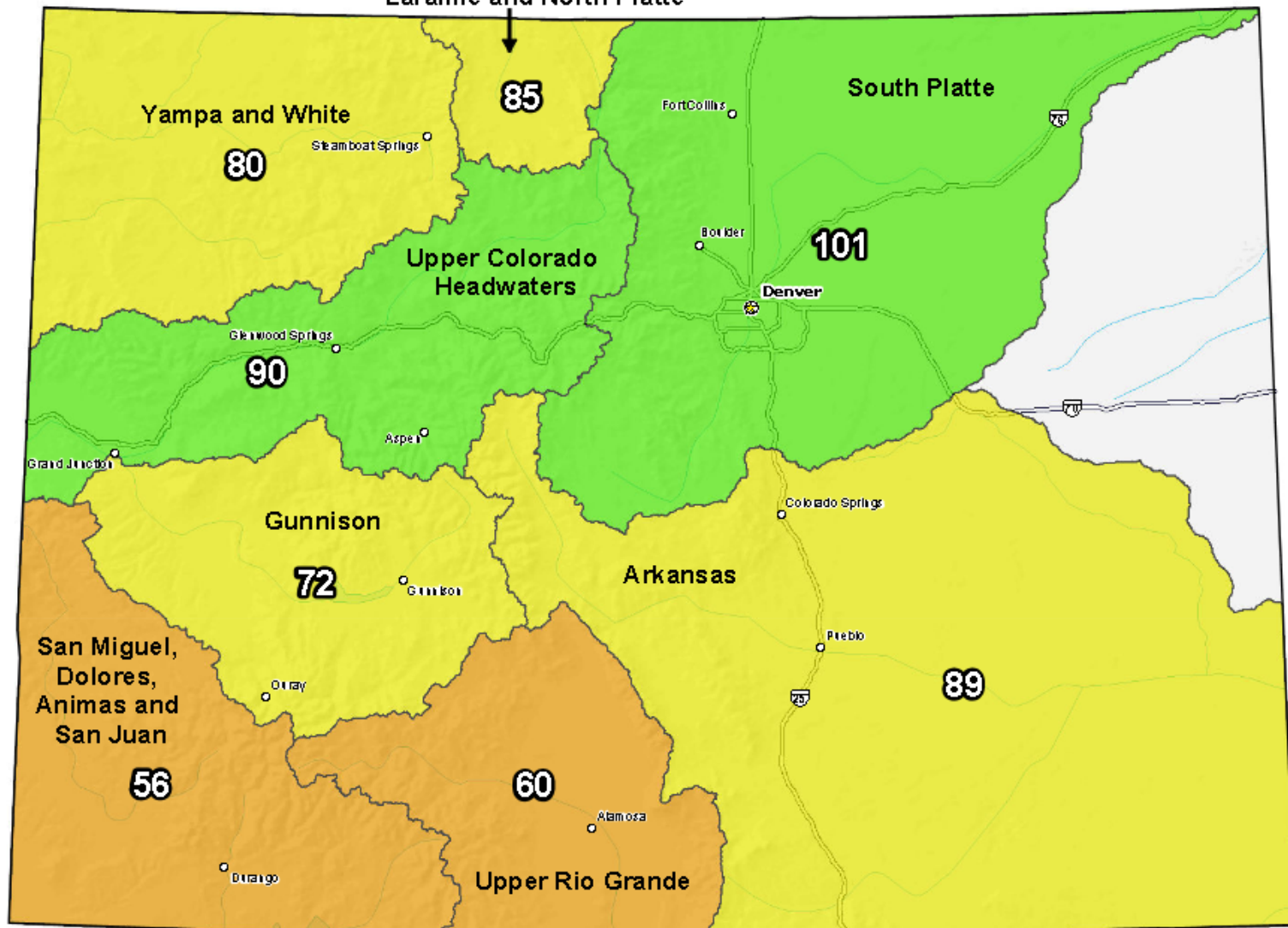
Laramie and North Platte

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



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

**Provisional Data
Subject to Revision**



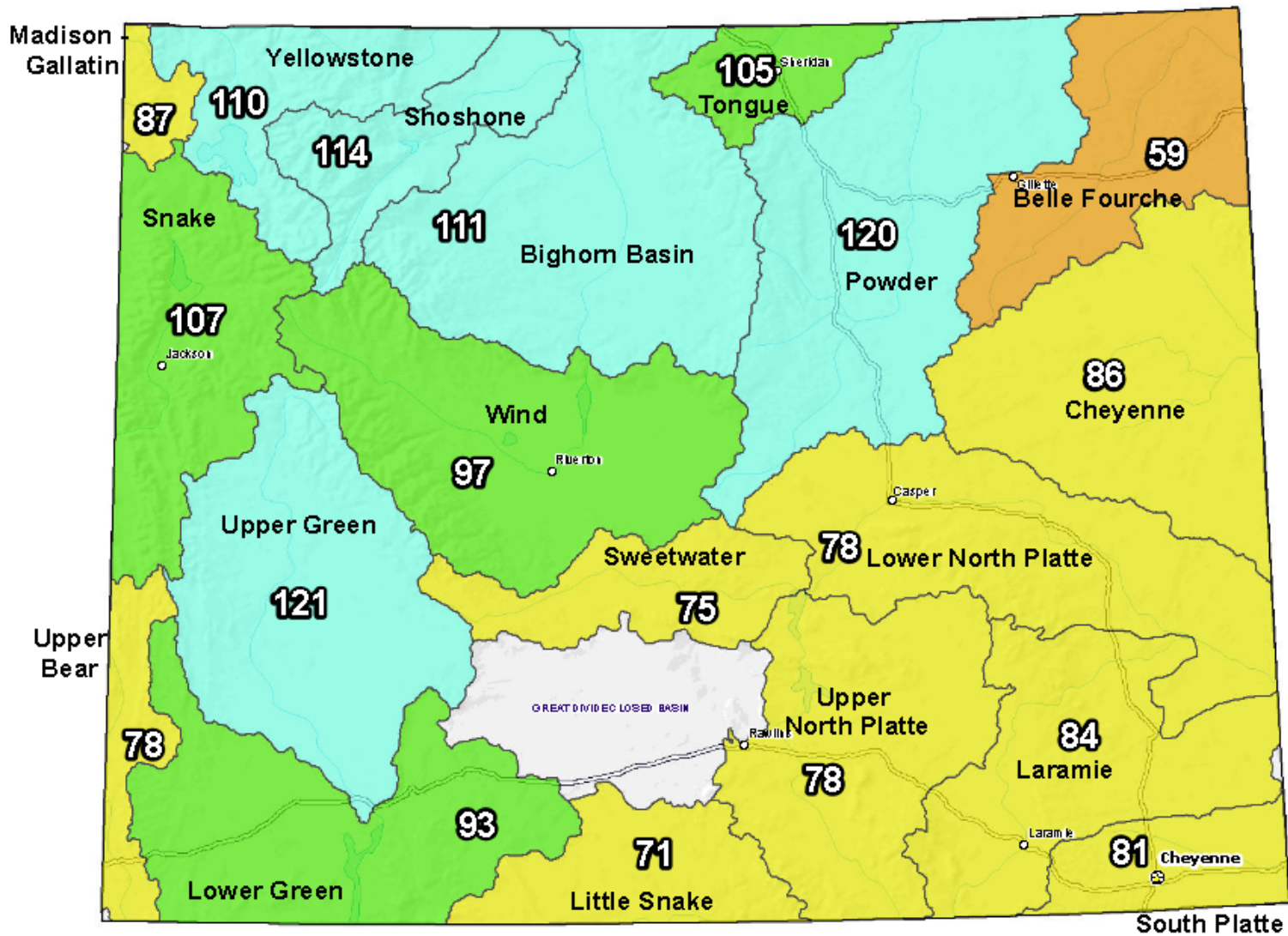
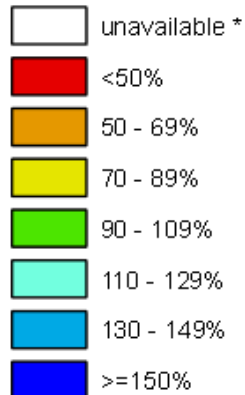
The snow water equivalent percent of normal represents the current snow water equivalent found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

Prepared by:
USDA/NRCS National Water and Climate Center
Portland, Oregon
<http://www.wcc.nrcs.usda.gov>

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

Feb 18, 2015

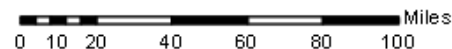
Current Snow Water Equivalent (SWE) Basin-wide Percent of 1981-2010 Median



Provisional Data
Subject to Revision



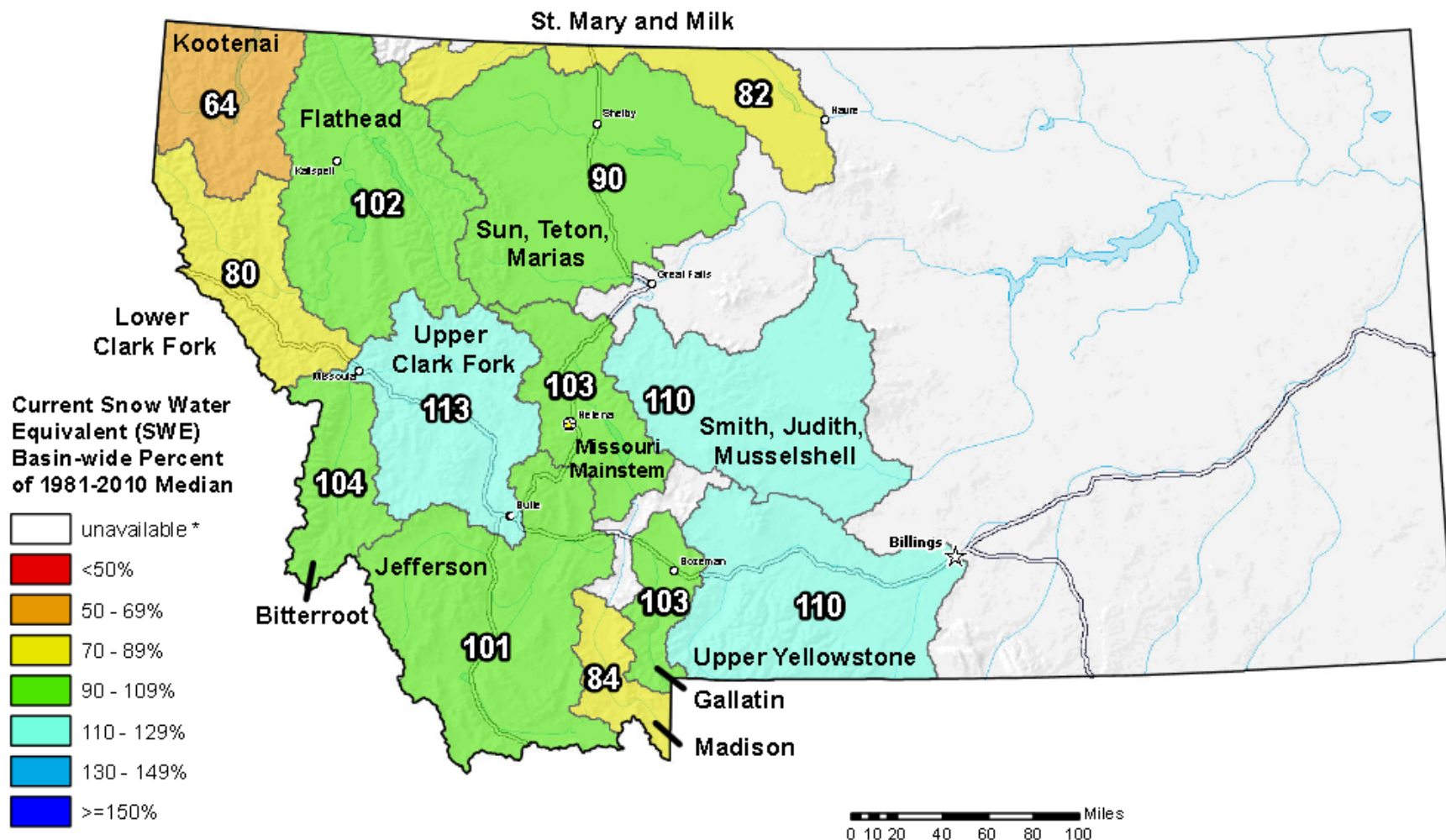
The snow water equivalent percent of normal represents the current snow water equivalent found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).



Prepared by:
USDA NRCS National Water and Climate Center
Portland, Oregon
<http://www.wcc.nrcs.usda.gov>

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

Feb 18, 2015



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

**Provisional Data
Subject to Revision**

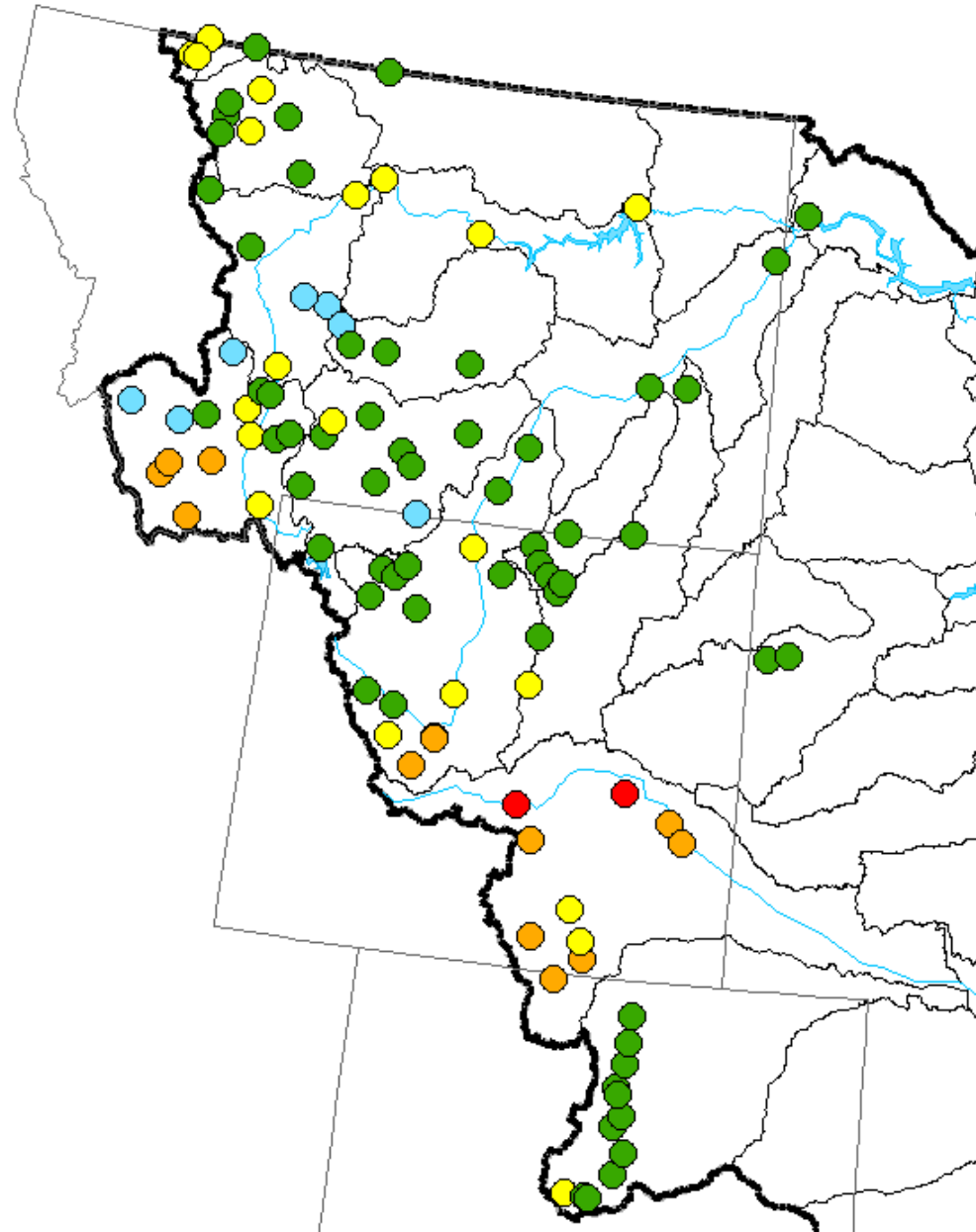
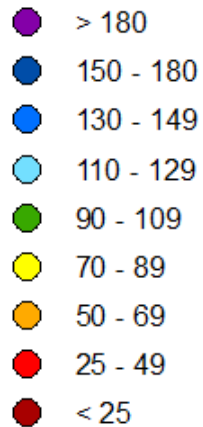


The snow water equivalent percent of normal represents the current snow water equivalent found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

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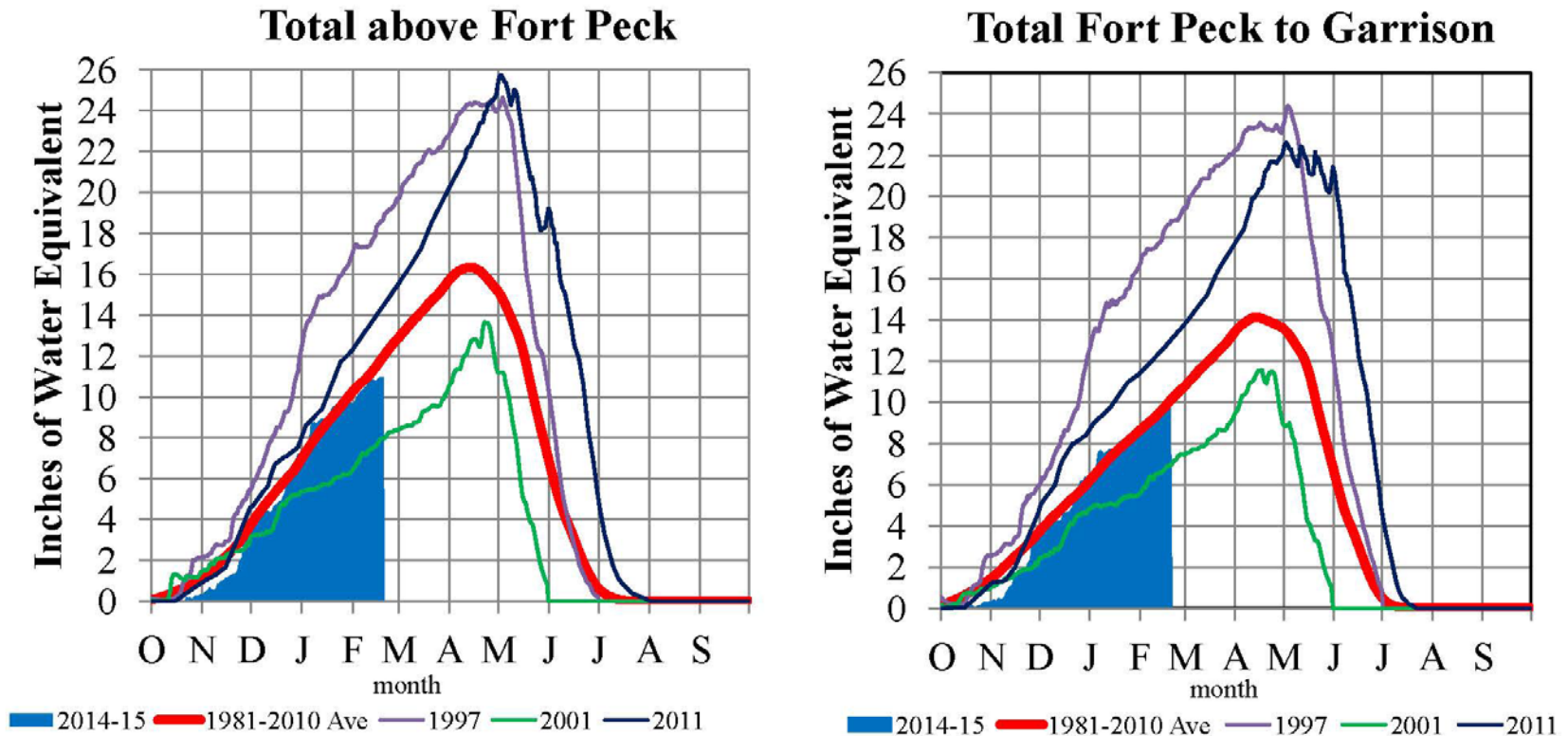
Missouri River Basin Spring and Summer Streamflow Forecasts as of February 1, 2015

Percent of
1981-2010 Average



Missouri River Basin – Mountain Snowpack Water Content 2014-2015 with comparison plots from 1997*, 2001*, and 2011

February 18, 2015



The Missouri River Basin mountain snowpack normally peaks near April 15. By February 15, normally 70% of the peak has accumulated. On February 18, 2015 the mountain snow water equivalent (SWE) in the “Total above Fort Peck” reach is currently 11.0”, 92% of average. The mountain SWE in the “Total Fort Peck to Garrison” reach is currently 9.9”, 99% of average.

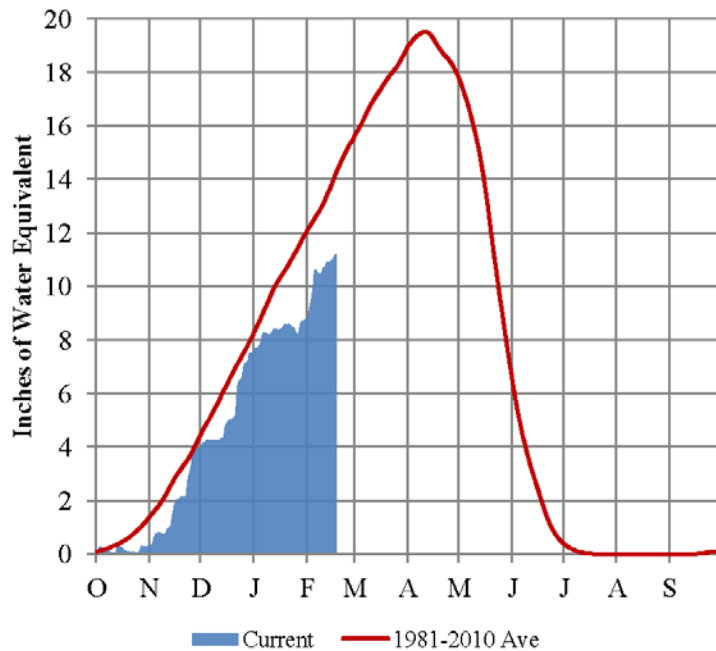
*Generally considered the high and low year of the last 20-year period.

Provisional data. Subject to revision.

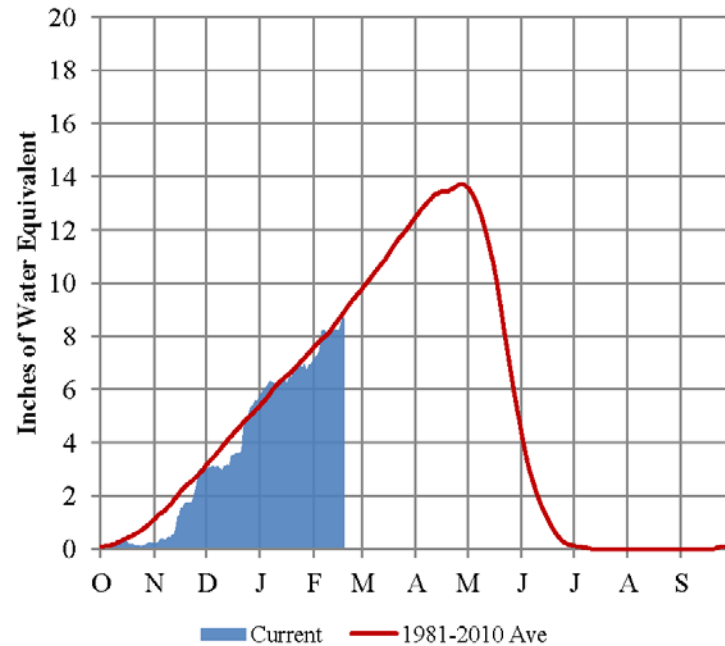
Platte River Basin - Mountain Snowpack Water Content Water Year 2014-2015

2/19/2015

Total North Platte



Total South Platte



The North and South Platte River Basin mountain snowpacks normally peak near April 15. As of February 18, 2015, the mountain snowpack SWE in the "Total North Platte" reach is currently 11.2", 79% of average. The mountain snowpack SWE in the "Total South Platte" reach is currently 8.6", 97% of average.

Provisional Data. Subject to Revision

Great Lakes



JANUARY MEAN LAKE LEVELS

(IGLD 1985)

		Superior	Mich-Huron	St. Clair	Erie	Ontario
* 2015	Ft.	602.17	579.10	573.98	571.39	244.62
	M.	183.54	176.51	174.95	174.16	74.56
2014	Ft.	601.35	577.26	573.10	570.87	244.88
	M.	183.29	175.95	174.68	174.00	74.64
** MAX.	Ft.	602.69	581.30	576.77	573.69	246.59
	M.	183.70	177.18	175.80	174.86	75.16
** MIN.	Yr.	1986	1987	1986	1987	1946
	Ft.	599.84	576.02	570.47	568.27	242.16
** AVG.	M.	182.83	175.57	173.88	173.21	73.81
	Yr.	1926	2013	1936	1935	1935
	Ft.	601.44	578.38	573.59	570.83	244.62
	M.	183.32	176.29	174.83	173.99	74.56

PRECIPITATION (INCHES)

BASIN	January				12-Month Comparison			
	2015	Average (1900-2010)	Diff.	% of Average	Last 12 Months	Average (1900-2010)	Diff.	% of Average
Superior	1.36	1.94	-0.58	70	33.29	30.46	2.83	109
Michigan-Huron	1.14	2.14	-1.00	53	34.91	32.44	2.47	108
Erie	1.82	2.49	-0.67	73	33.75	35.43	-1.68	95
Ontario	1.57	2.74	-1.17	57	35.19	35.73	-0.54	98
Great Lakes	1.32	2.20	-0.88	60	34.31	32.64	1.67	105

visional
erage, Maximum and Minimum for period 1918-2013

LAKE	January Net Basin Supplies ¹ (cfs)		January Outflows ² (cfs)	
	2015	Average (1900-2008)	2015	Average ³ (1900-2008)
Superior	-30,000	-13,000	85,000	69,000
Michigan-Huron	51,000	60,000	165,000	161,000
Erie	1,000	29,000	206,000	196,000
Ontario	22,000	32,000	221,000	222,000



GREAT LAKES SURFACE ENVIRONMENTAL ANALYSIS (GLSEA)



Analysis Date: JD 048 02/17/2015

Percent Pixels with Data within +/-10 Days: 21.0%

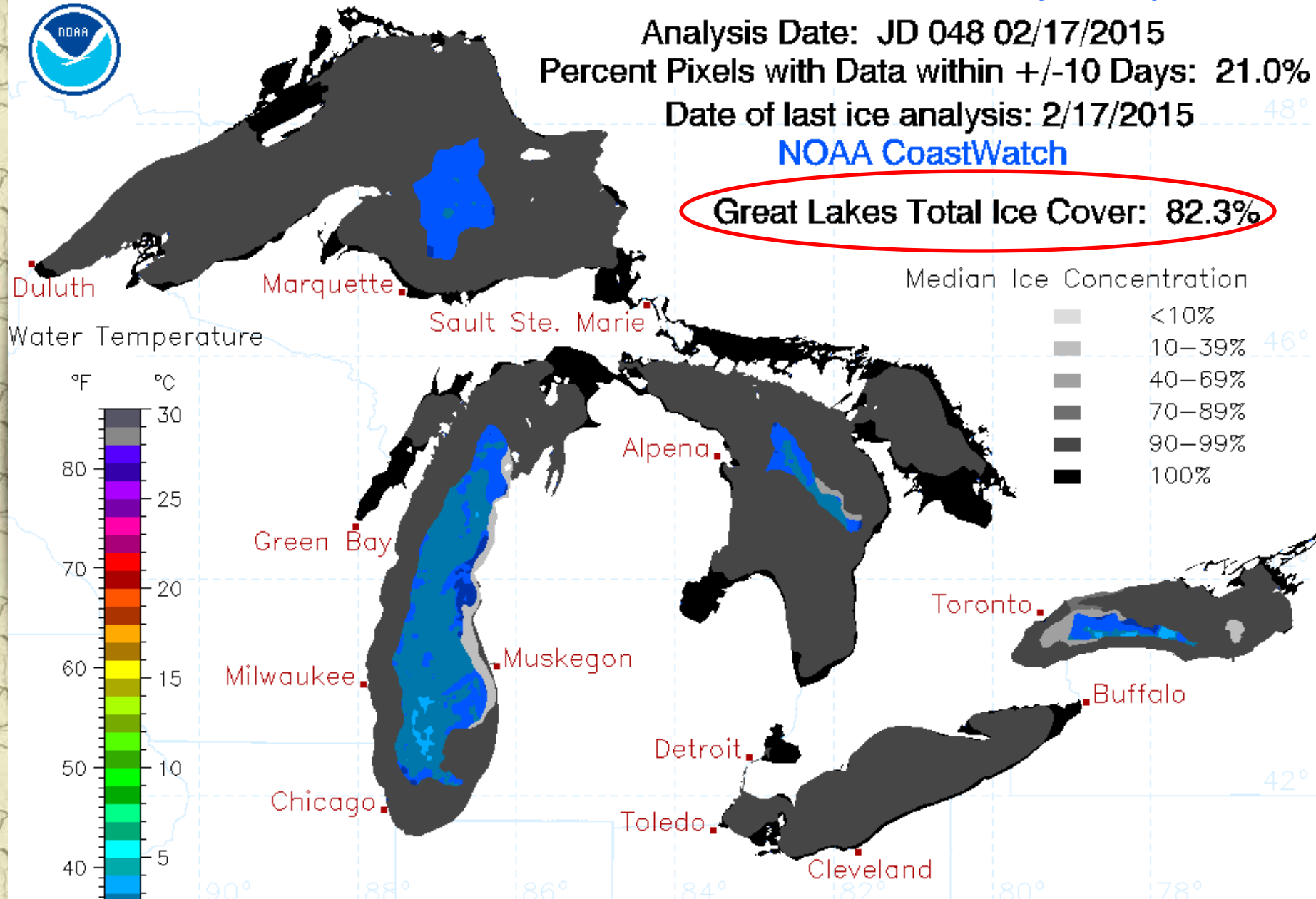
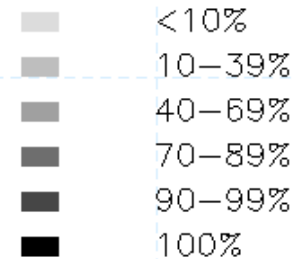
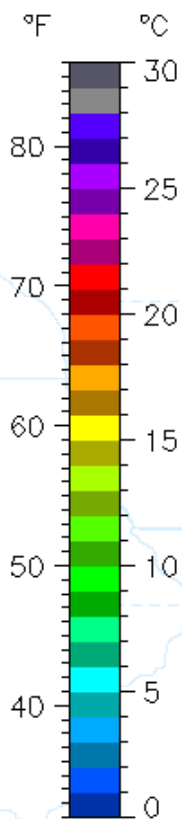
Date of last ice analysis: 2/17/2015

NOAA CoastWatch

Great Lakes Total Ice Cover: 82.3%

Water Temperature

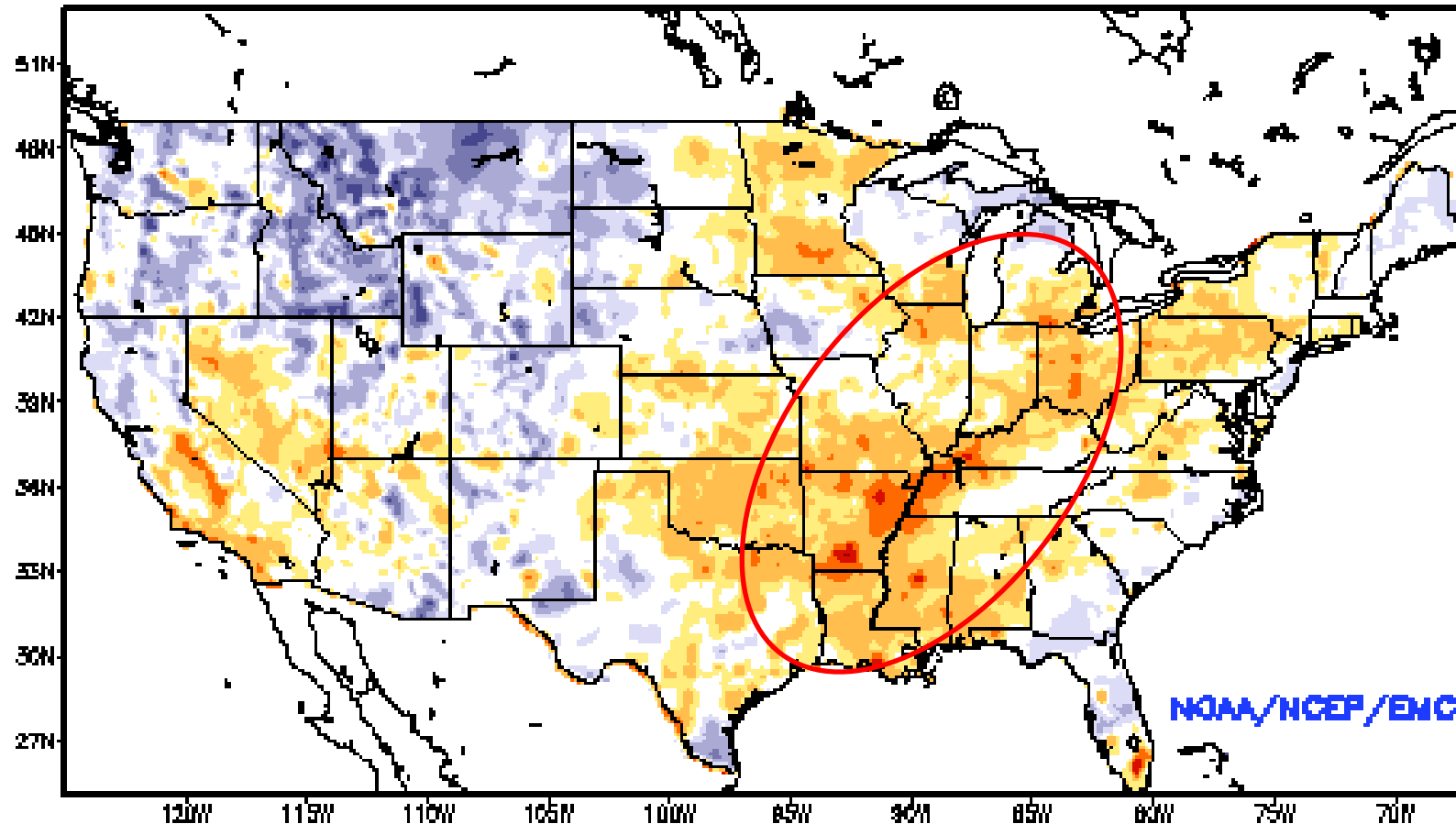
Median Ice Concentration



Great Lakes Environmental Research Laboratory
National Ice Center

Soil Moisture Anomaly

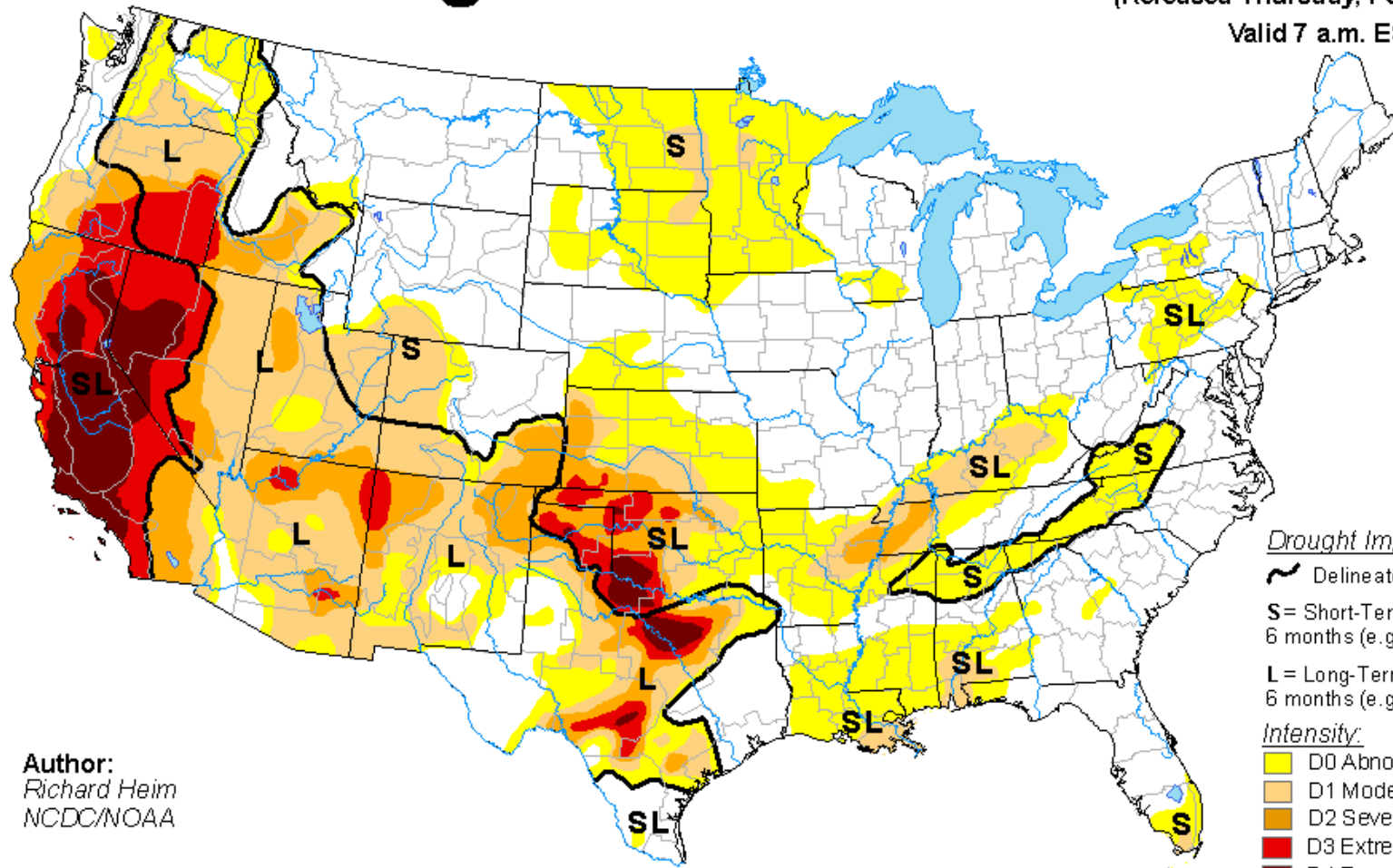
Ensemble-Mean - Current Total Column Soil Moisture Anomaly (mm)
NCEP NLDAS Products Valid: FEB 13, 2015



U.S. Drought Monitor

February 17, 2015
(Released Thursday, Feb. 19, 2015)

Valid 7 a.m. EST



Author:
Richard Heim
NCDC/NOAA

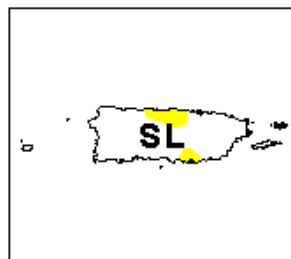
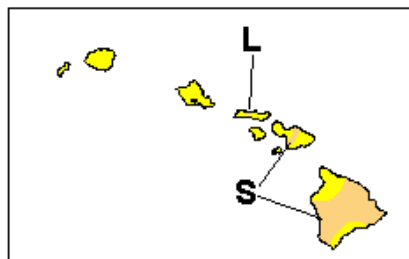
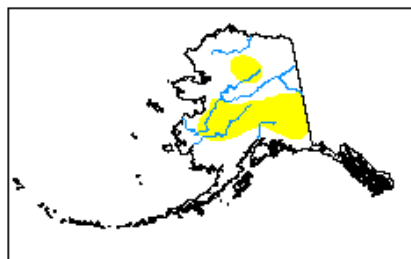
Drought Impact Types:

- ~ 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.



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

Drought Condition (Percent Area): United States

Conditions for the U.S., including Alaska, Hawaii and Puerto Rico

Week	Date	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	2015-02-17	49.58	50.42	26.92	13.74	7.19	2.81
Last Week	2015-02-10	55.97	44.03	24.31	13.52	7.09	2.73
3 Months Ago	2014-11-18	60.54	39.46	24.61	14.31	7.37	3.17
Start of Calendar Year	2014-12-30	60.84	39.16	23.96	14.14	7.49	2.12
Start of Water Year	2014-09-30	59.89	40.11	25.54	15.59	7.86	3.22
One Year Ago	2014-02-18	53.45	46.55	29.96	17.77	6.06	0.95

Conditions for the Contiguous U.S.

Week	Date	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	2015-02-17	45.26	54.74	32.13	16.44	8.60	3.37
Last Week	2015-02-10	47.51	52.49	29.00	16.18	8.49	3.27
3 Months Ago	2014-11-18	52.78	47.22	29.45	17.13	8.82	3.79
Start of Calendar Year	2014-12-30	53.20	46.80	28.68	16.93	8.96	2.54
Start of Water Year	2014-09-30	52.22	47.78	30.57	18.66	9.41	3.85
One Year Ago	2014-02-18	46.79	53.21	35.73	21.26	7.26	1.14

As of 2/17/15 just over **73,500,000** people are being impacted by drought in the CONUS.

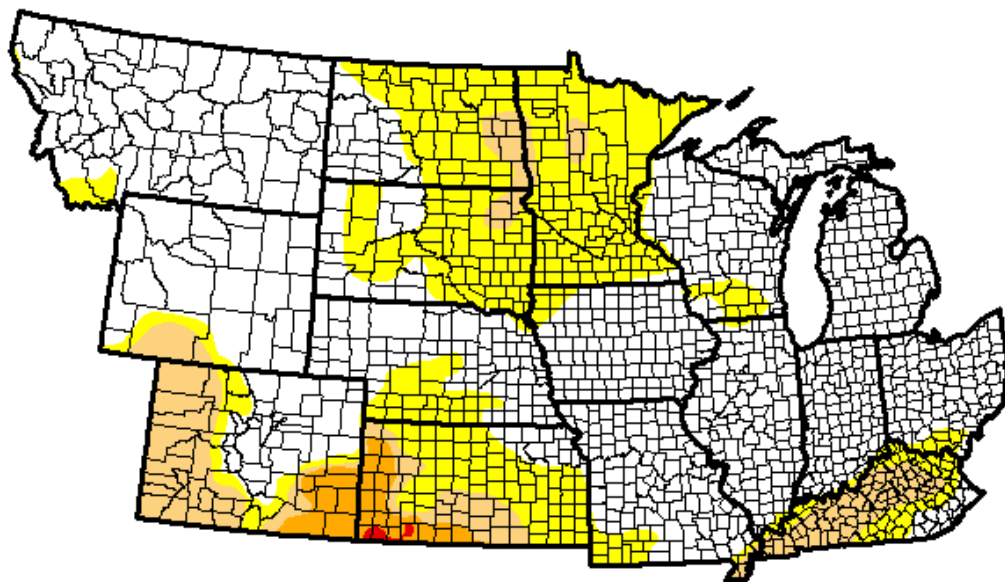


U.S. Drought Monitor NWS Central Region

February 17, 2015
(Released Thursday, Feb. 19, 2015)
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	63.37	36.63	11.26	2.43	0.13	0.00
Last Week <i>2/10/2015</i>	63.37	36.63	7.94	2.43	0.13	0.00
3 Months Ago <i>11/18/2014</i>	83.53	16.47	4.97	2.48	0.16	0.00
Start of Calendar Year <i>12/31/2014</i>	74.67	25.33	5.02	2.41	0.16	0.00
Start of Water Year <i>9/30/2014</i>	85.60	14.40	5.68	2.64	0.38	0.00
One Year Ago <i>2/18/2014</i>	61.77	38.23	16.77	7.21	1.26	0.13



Intensity:



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

Author:

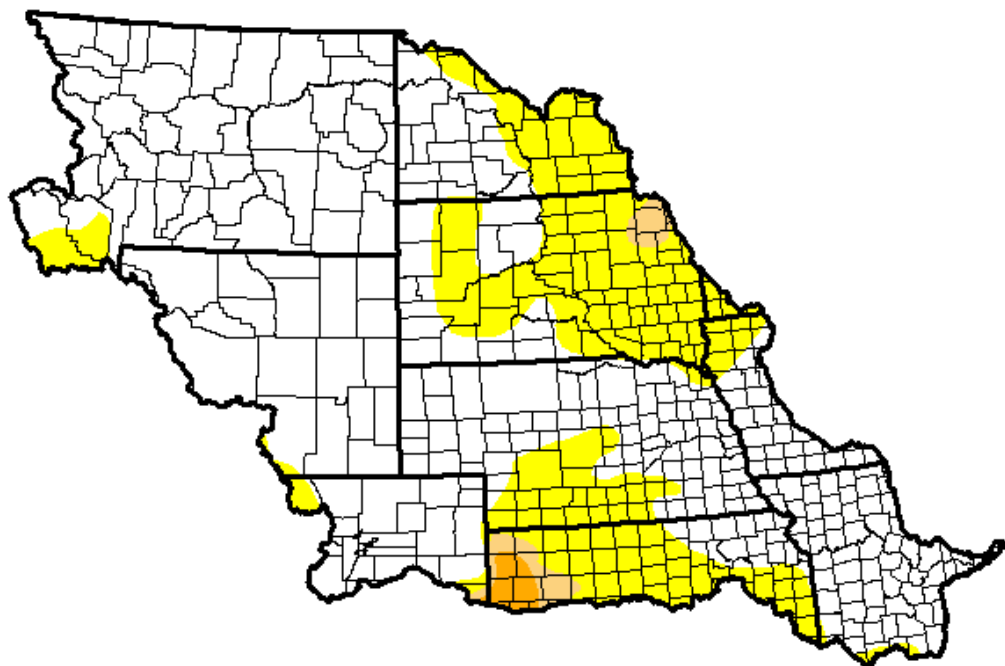
Richard Heim
NCDC/NOAA



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

U.S. Drought Monitor Missouri Watershed

February 17, 2015
(Released Thursday, Feb. 19, 2015)
Valid 7 a.m. EST



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	73.61	26.39	2.01	0.72	0.00	0.00
Last Week <i>2/10/2015</i>	73.61	26.39	2.01	0.72	0.00	0.00
3 Months Ago <i>11/18/2014</i>	88.40	11.60	1.89	0.89	0.00	0.00
Start of Calendar Year <i>12/30/2014</i>	77.56	22.44	2.00	0.72	0.00	0.00
Start of Water Year <i>9/30/2014</i>	90.62	9.38	2.27	0.89	0.00	0.00
One Year Ago <i>2/18/2014</i>	64.59	35.41	15.84	8.11	1.55	0.00

Intensity:

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

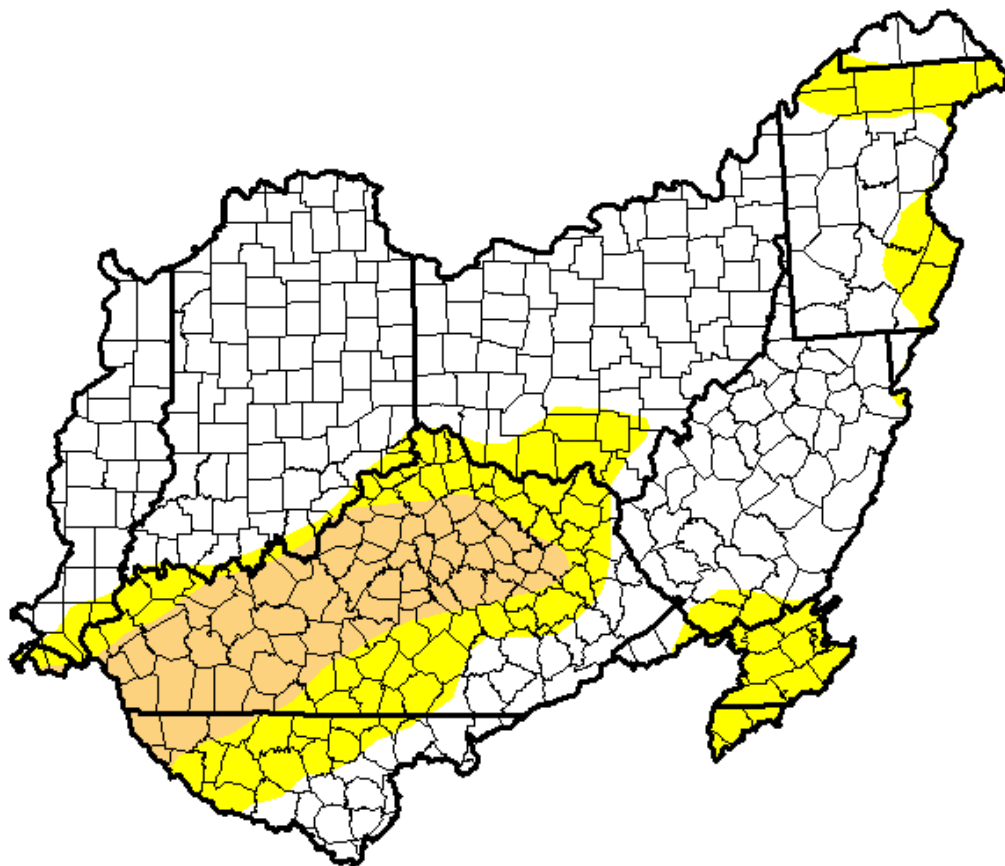
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:
Richard Heim
NCDC/NOAA



U.S. Drought Monitor Ohio Watershed

February 17, 2015
(Released Thursday, Feb. 19, 2015)
Valid 7 a.m. EST



Drought Conditions (Percent Area)

	None	D0	D1	D2	D3	D4
Current	66.40	21.26	12.34	0.00	0.00	0.00
Last Week <i>2/10/2015</i>	66.40	21.26	12.34	0.00	0.00	0.00
3 Months Ago <i>11/18/2014</i>	99.94	0.06	0.00	0.00	0.00	0.00
Start of Calendar Year <i>12/31/2014</i>	95.60	4.40	0.00	0.00	0.00	0.00
Start of Water Year <i>9/30/2014</i>	89.27	10.73	0.00	0.00	0.00	0.00
One Year Ago <i>2/18/2014</i>	99.44	0.52	0.03	0.00	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.

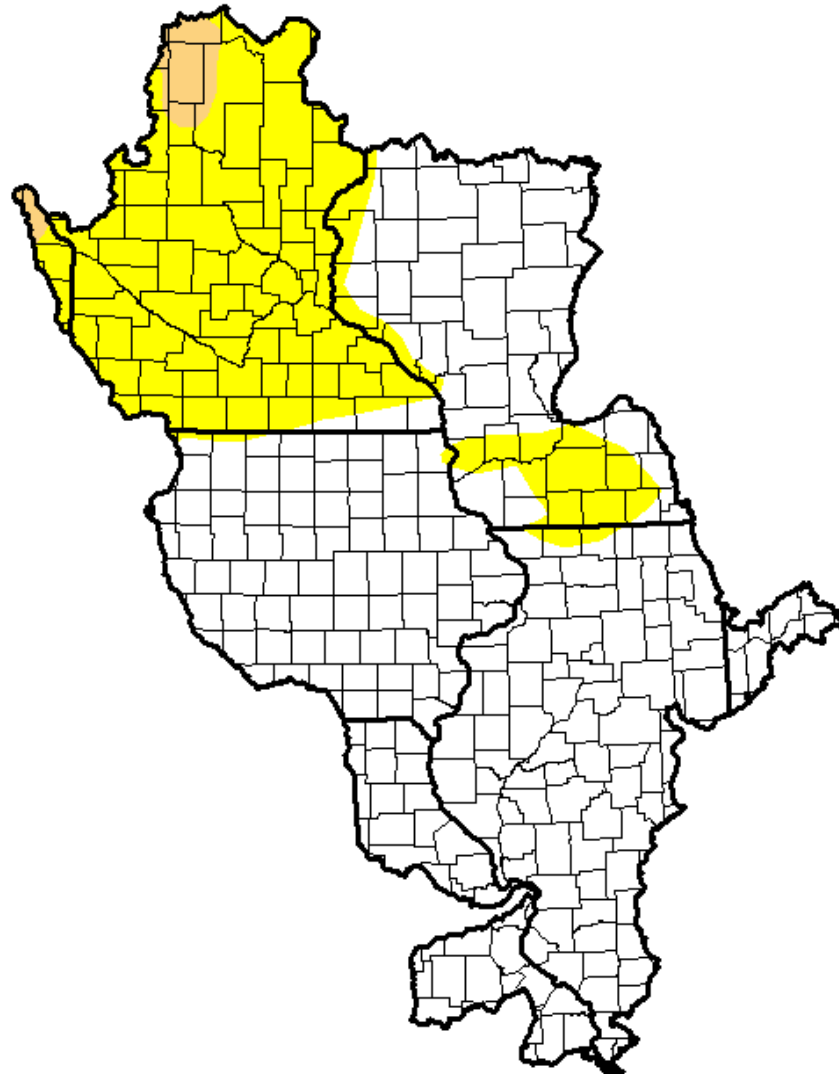
Author:
Richard Heim
NCDC/NOAA



U.S. Drought Monitor

Upper Mississippi Watershed

February 17, 2015
 (Released Thursday, Feb. 19, 2015)
 Valid 7 a.m. EST



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	69.70	30.30	1.66	0.00	0.00	0.00
Last Week <i>2/10/2015</i>	69.70	30.30	1.66	0.00	0.00	0.00
3 Months Ago <i>11/18/2014</i>	82.93	17.07	0.25	0.00	0.00	0.00
Start of Calendar Year <i>12/31/2014</i>	82.52	17.48	0.25	0.00	0.00	0.00
Start of Water Year <i>9/30/2014</i>	95.46	4.54	0.00	0.00	0.00	0.00
One Year Ago <i>2/18/2014</i>	36.19	63.81	36.30	6.36	0.00	0.00

Intensity:

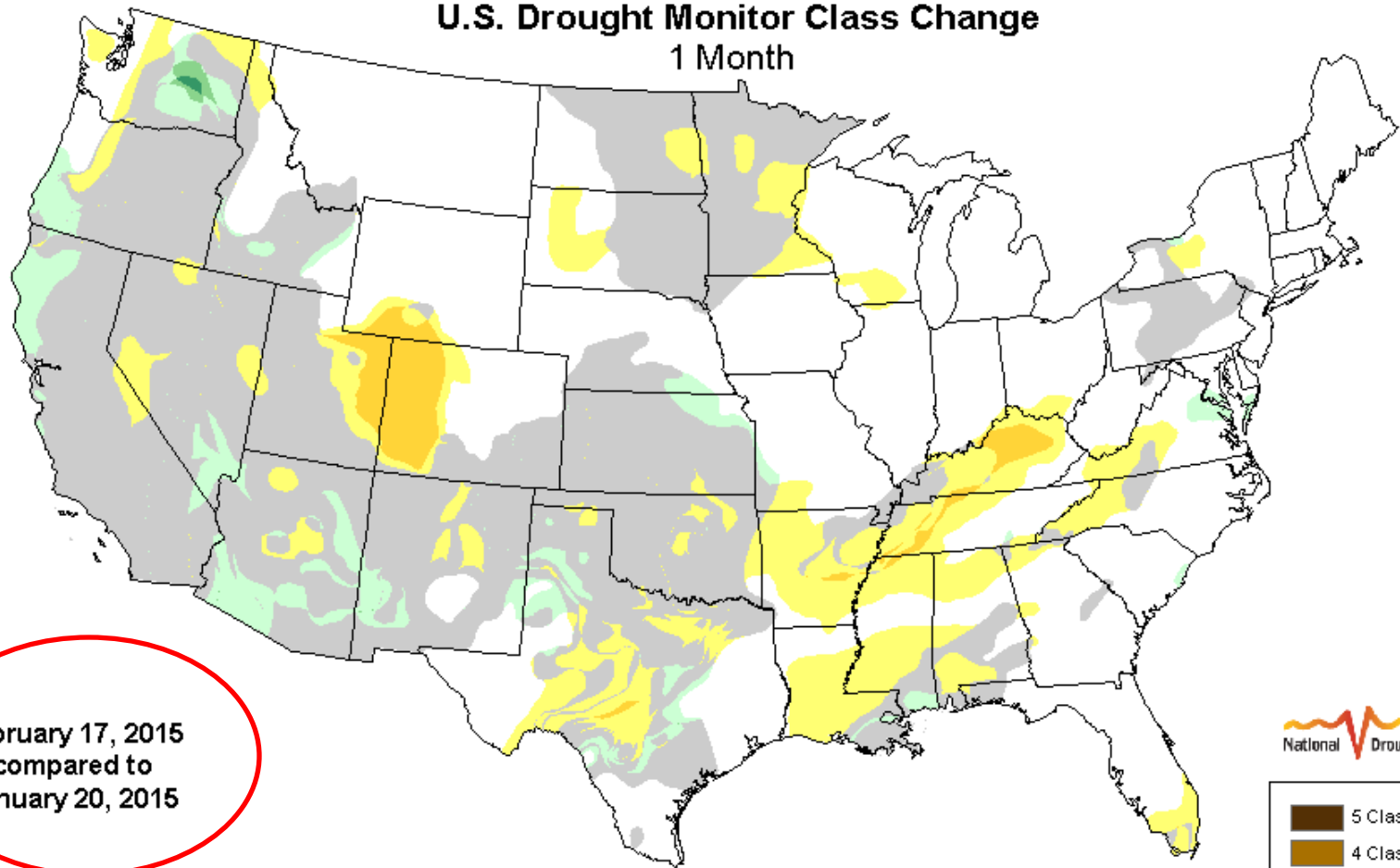
- D0 Abnormally Dry
- D1 Moderate Drought
- D3 Extreme Drought
- D4 Exceptional Drought

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

Author:
 Richard Heim
 NCDC/NOAA














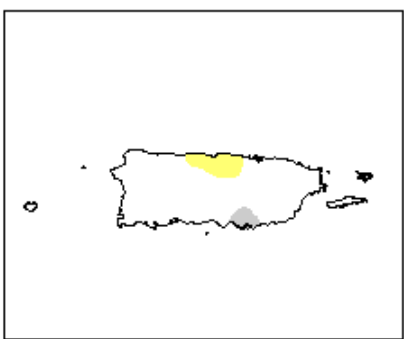
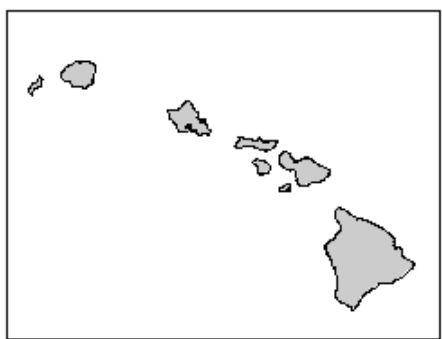
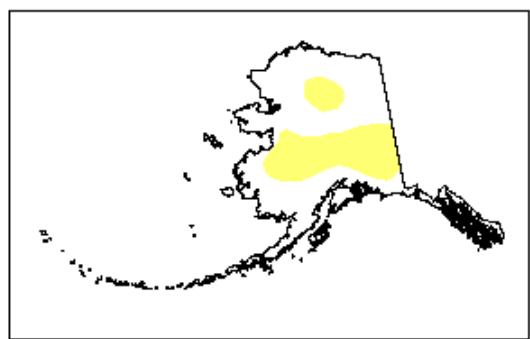
U.S. Drought Monitor Class Change 1 Month



February 17, 2015
compared to
January 20, 2015



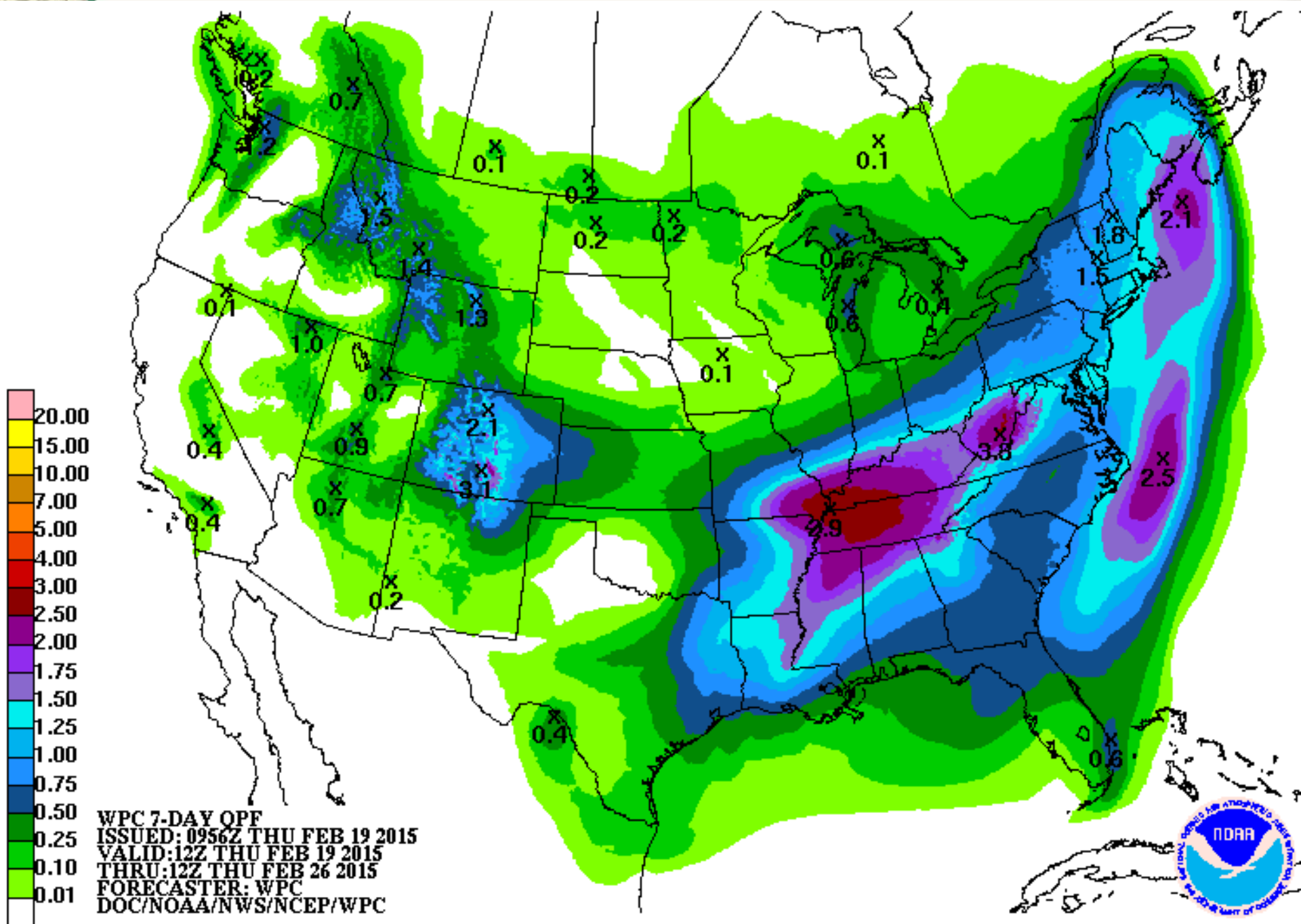
-  5 Class Degradation
-  4 Class Degradation
-  3 Class Degradation
-  2 Class Degradation
-  1 Class Degradation
-  No Change
-  1 Class Improvement
-  2 Class Improvement
-  3 Class Improvement
-  4 Class Improvement
-  5 Class Improvement



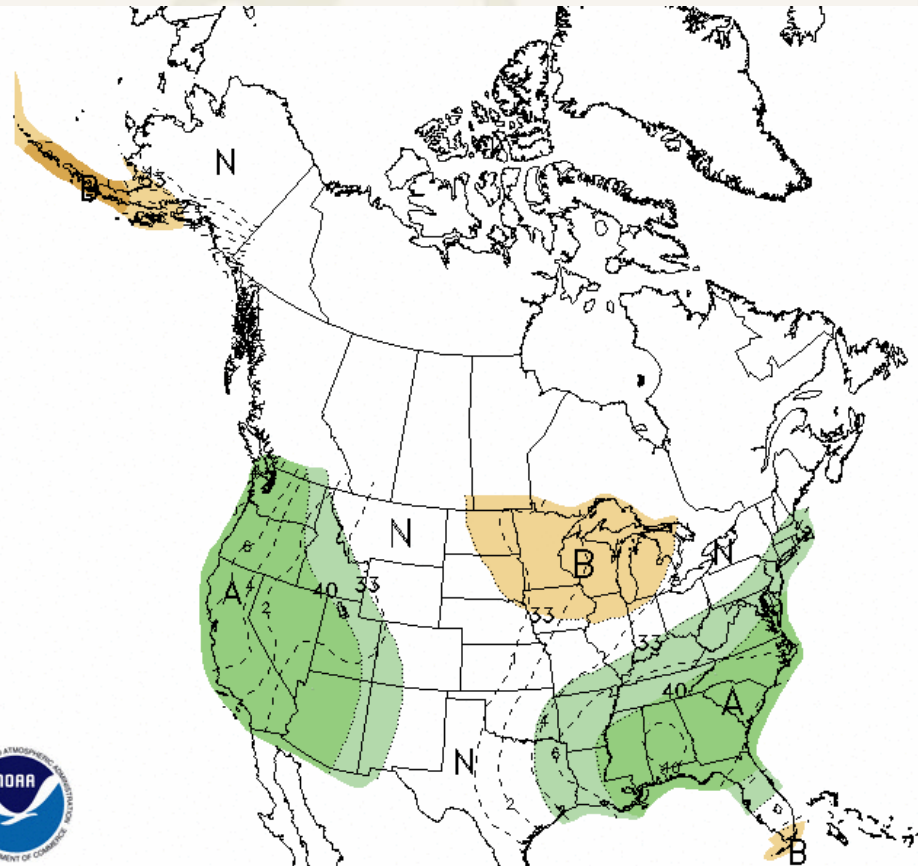
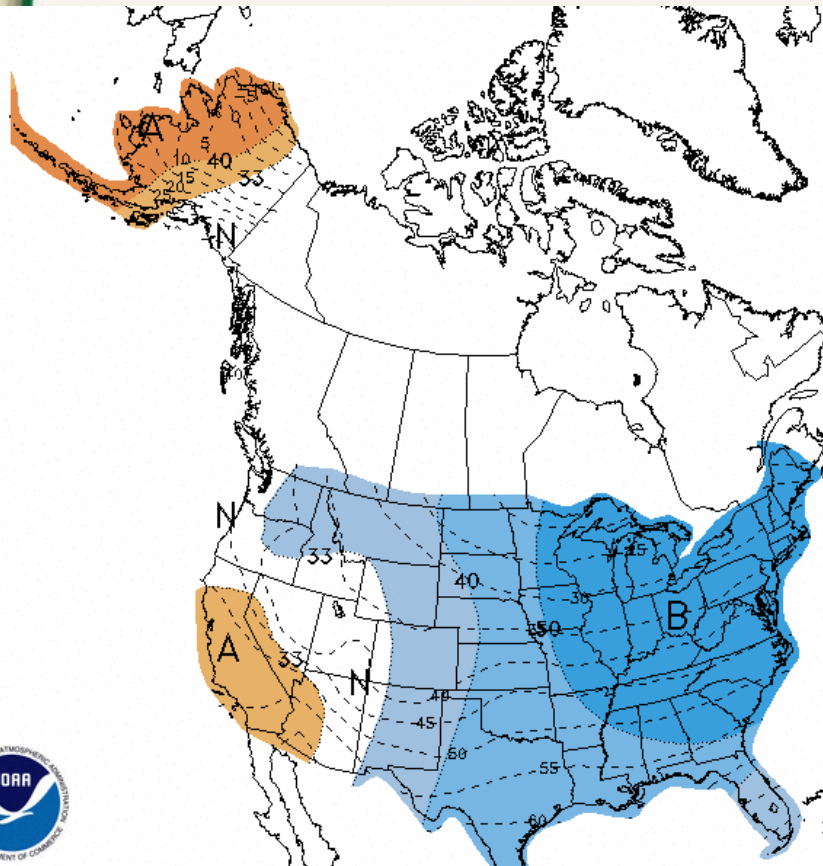
Climate Outlooks

- **7-day precipitation forecast**
- **8-14 day outlook**
- **Monthly/Seasonal**
- **Winter Outlook (Dec-Feb)**
- **Seasonal Drought Outlooks**





8-14 day Outlook

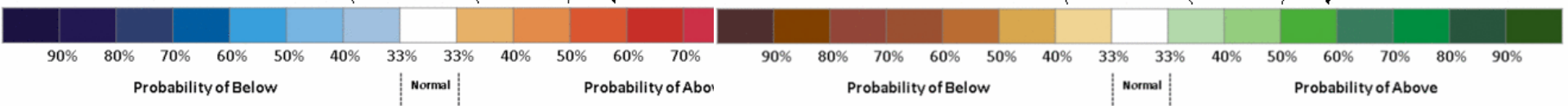


8-14 DAY OUTLOOK
TEMPERATURE PROBABILITY
MADE 18 FEB 2015
VALID FEB 26 - MAR 04, 2015

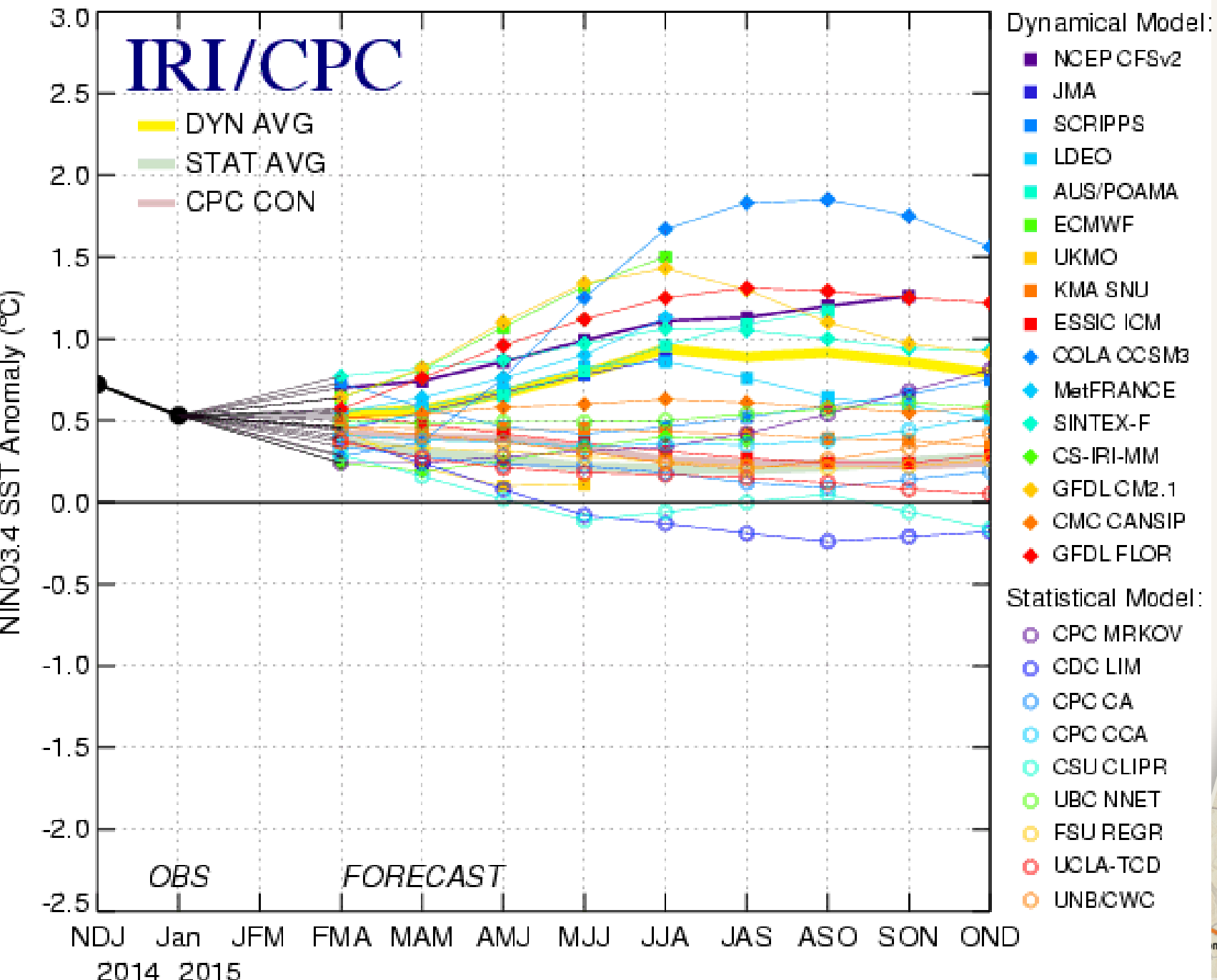
DASHED BLACK LINES ARE CLIMATOLOGY (DEG F) SHADED AREAS ARE VALUES ABOVE (A) OR BELOW (B) MEDIAN UNSHADED AREAS ARE NEAR-MEDIAN

8-14 DAY OUTLOOK
PRECIPITATION PROBABILITY
MADE 18 FEB 2015
VALID FEB 26 - MAR 04, 2015

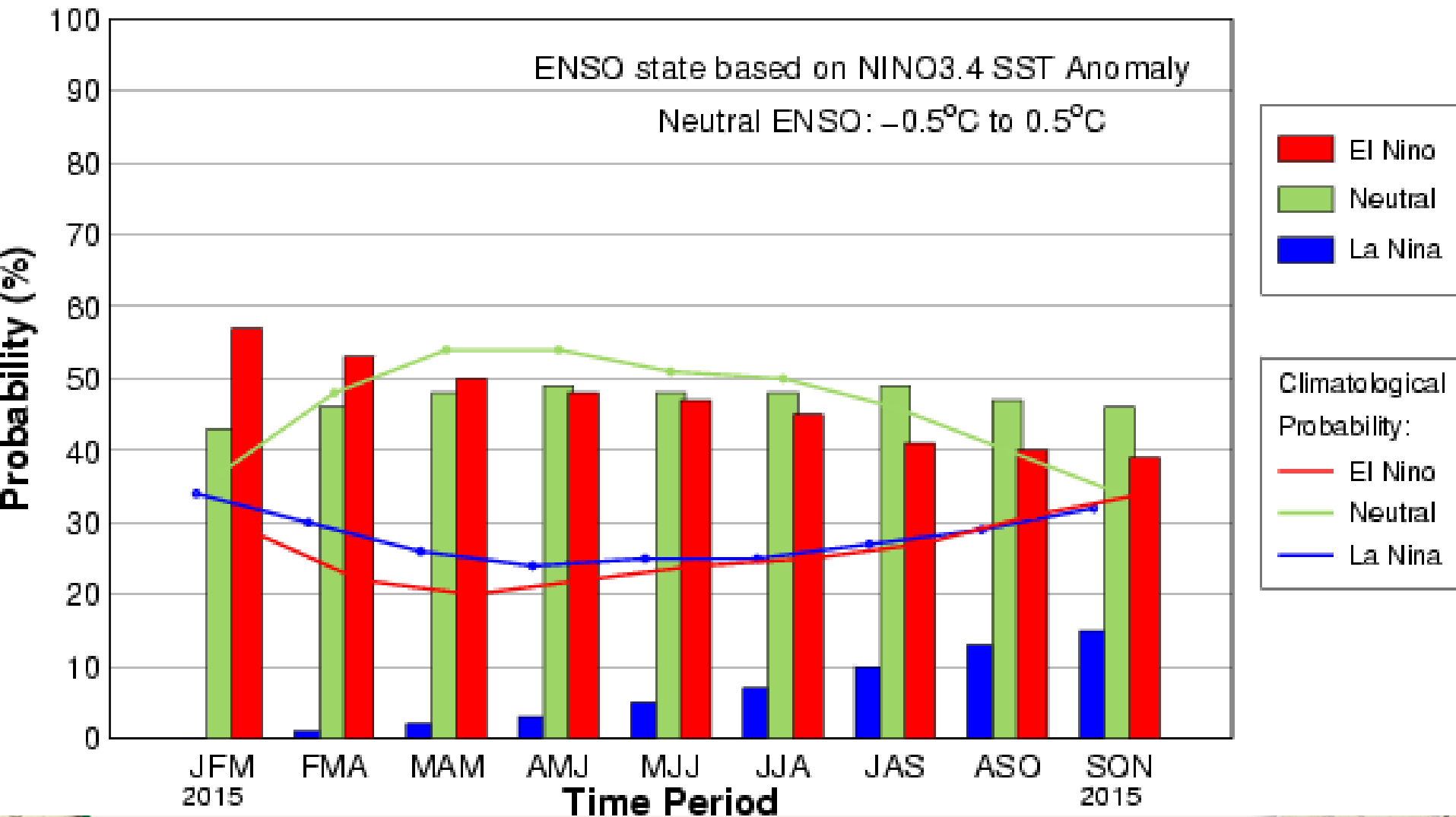
DASHED BLACK LINES ARE CLIMATOLOGY (TENTH OF INCHES) SHADED AREAS ARE FCS VALUES ABOVE (A) OR BELOW (B) MEDIAN UNSHADED AREAS ARE NEAR-MEDIAN



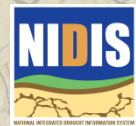
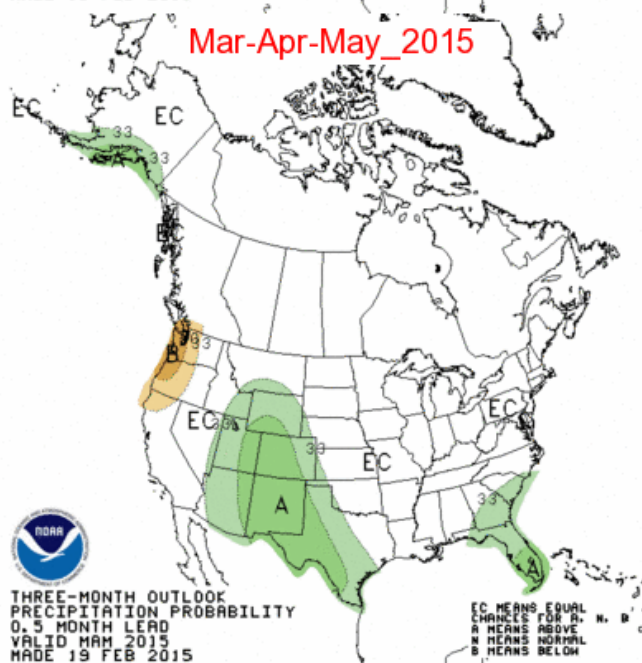
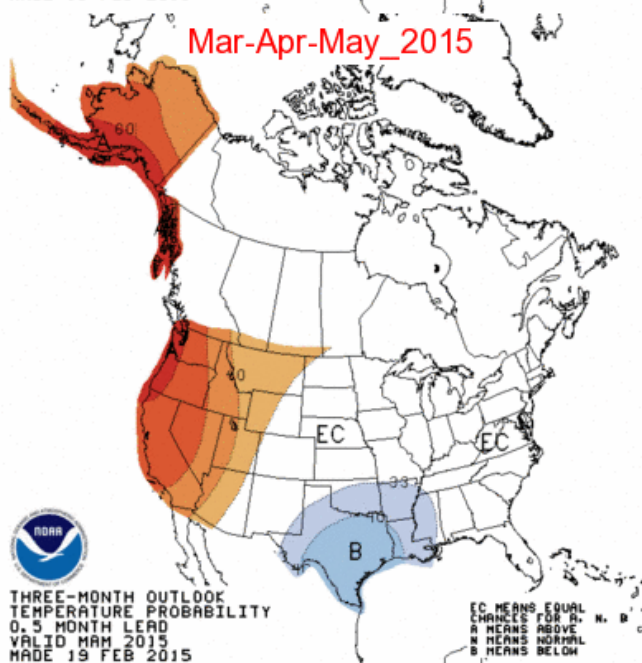
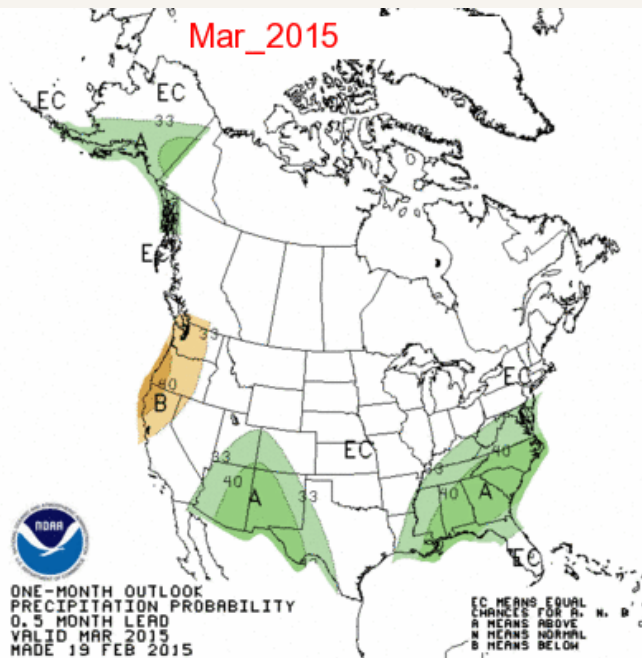
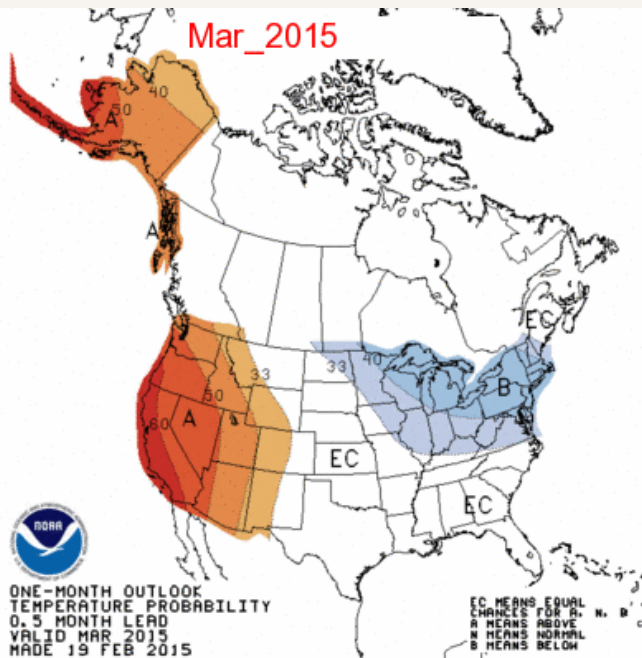
Mid-Feb 2015 Plume of Model ENSO Predictions



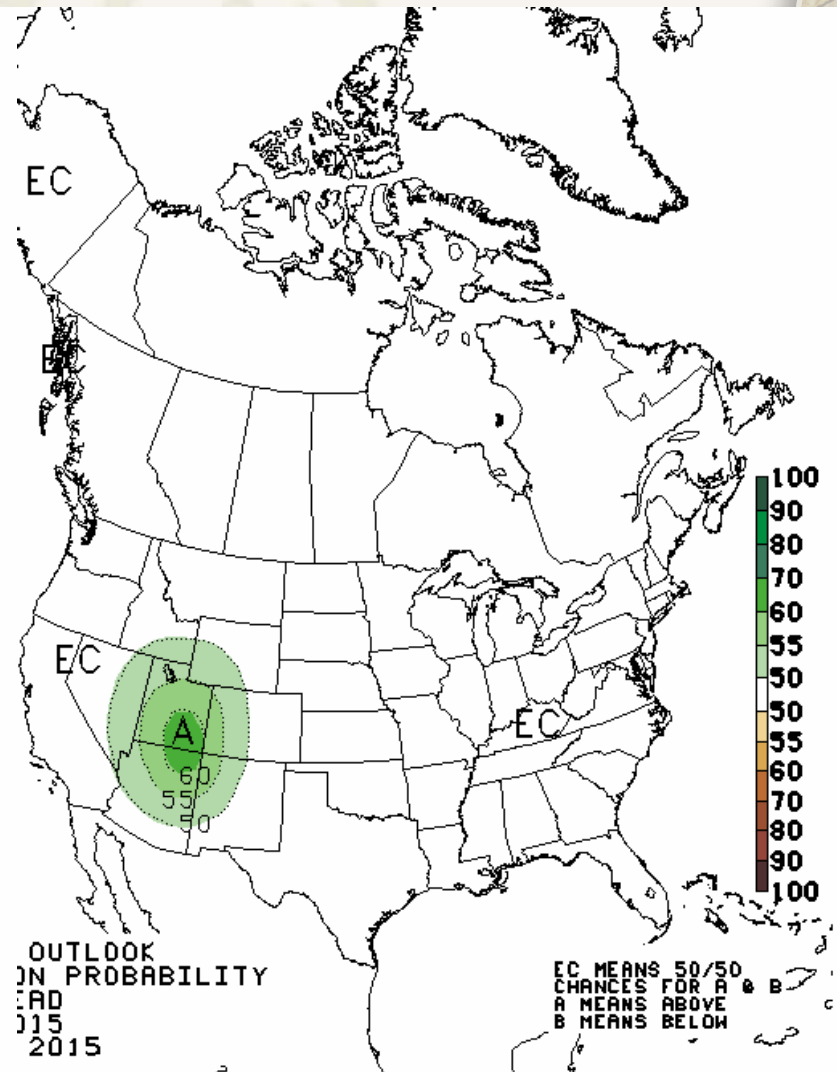
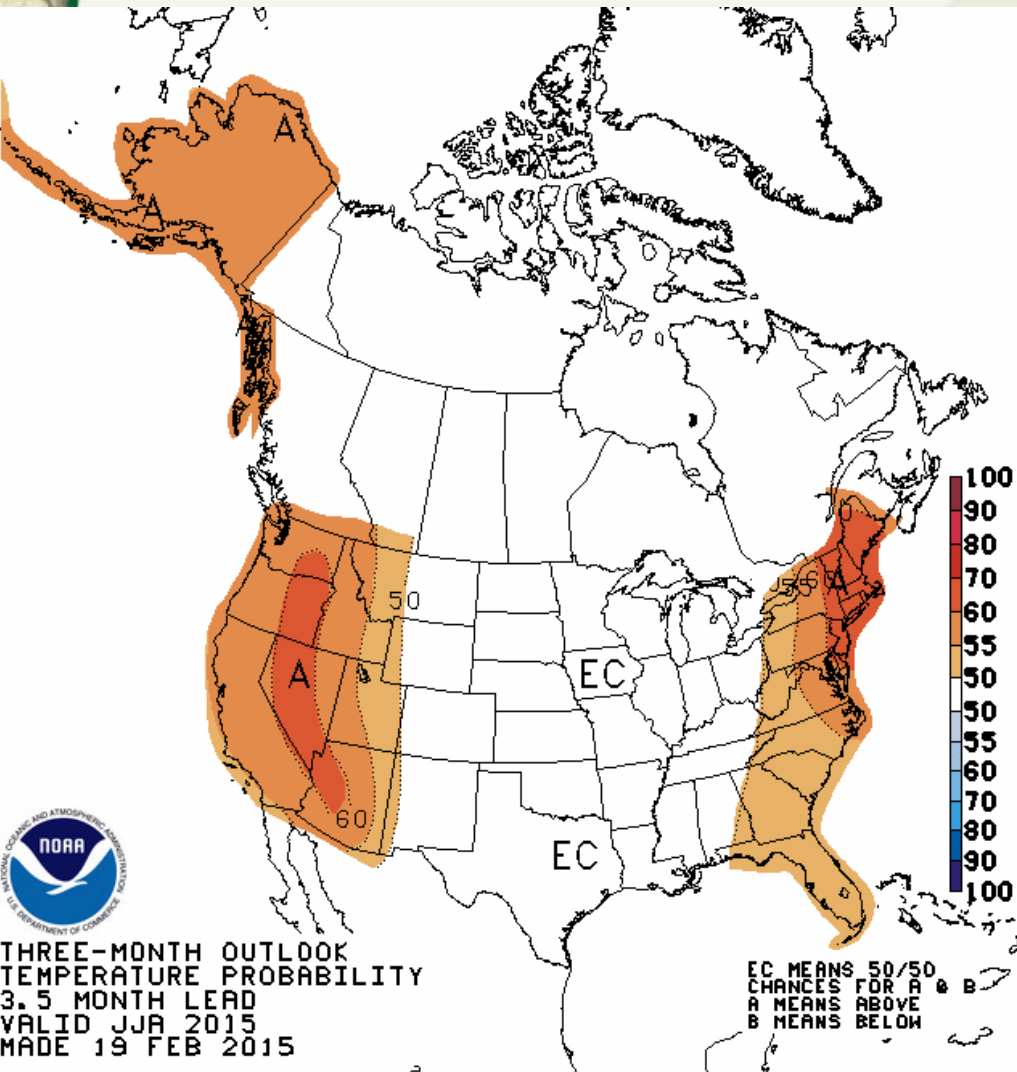
Early-Feb CPC/IRI Consensus Probabilistic ENSO Forecast



Monthly and Seasonal Outlook



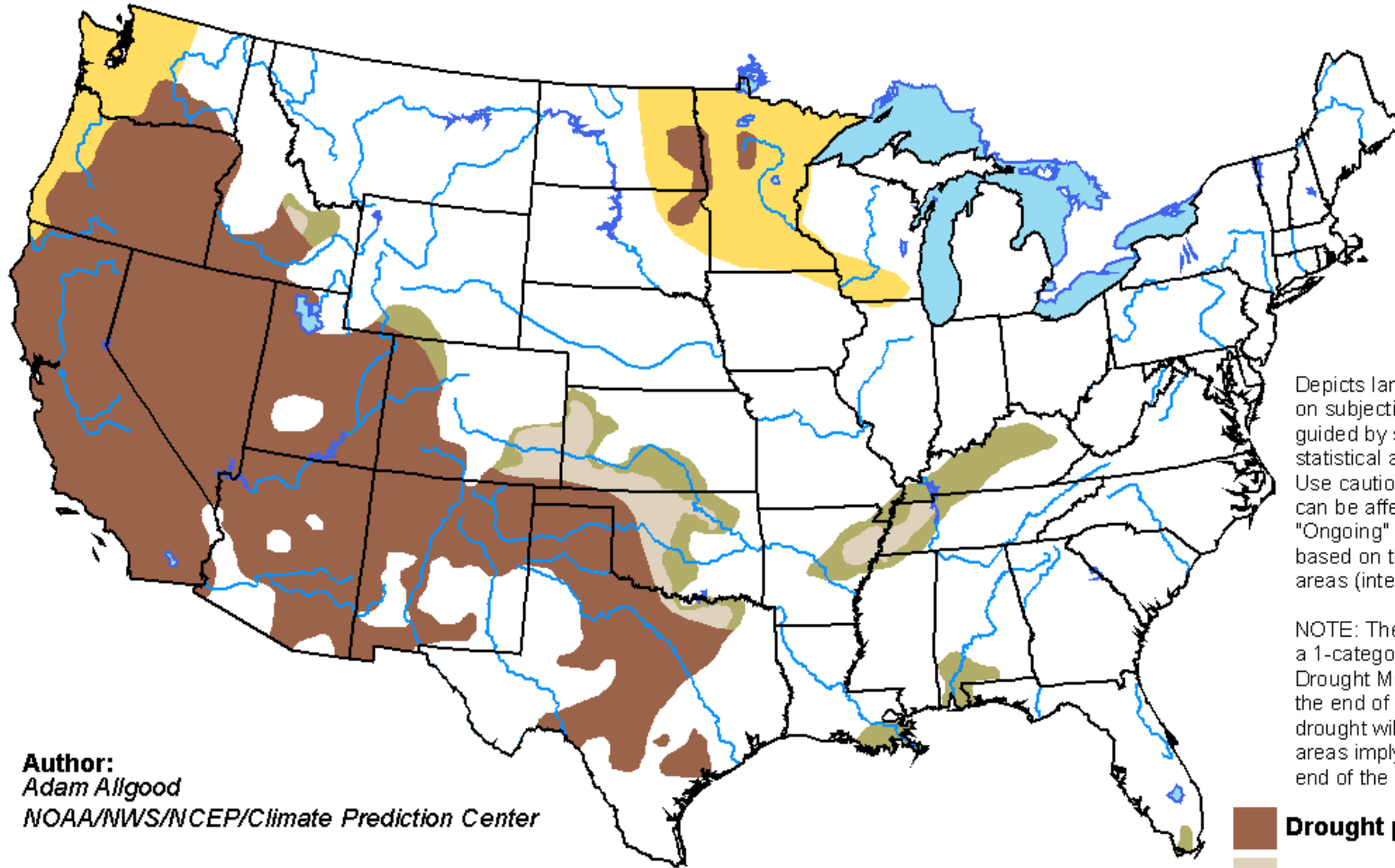
Summer Outlook



U.S. Seasonal Drought Outlook

Drought Tendency During the Valid Period





Valid for February 19 - May 31, 2015
Released February 19, 2015

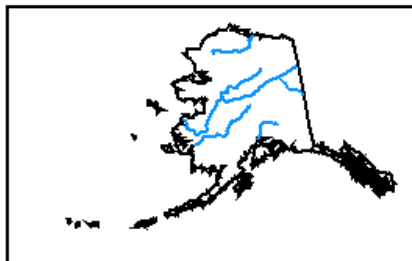


Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short lived events. "Ongoing" drought areas are based on the U.S. Drought Monitor areas (intensities of D1 to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

Author:
Adam Allgood
NOAA/NWS/NCEP/Climate Prediction Center

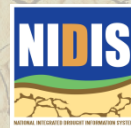
-  **Drought persists/intensifies**
-  **Drought remains but improves**
-  **Drought removal likely**
-  **Drought development likely**



<http://go.usa.gov/hHTe>

Summary

- ▶ Snow in the region: Most areas are seeing below normal snow for the season.
- ▶ Temperatures: Below normal in the eastern portion of the region and well above in the west.
- ▶ Forecasts: No strong indication of temperature or precipitation trends through the summer.
- ▶ Drought: Possible development in the upper Midwest through the spring. Some improvement over the Lower Mississippi and Ohio River basins.



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:

- Brian Fuchs: bfuchs2@unl.edu, 402-472-6775
- Jim Angel: jimangel@Illinois.edu, 217-333-0729
- Dennis Todey: dennis.todey@sdstate.edu, 605-688-5141
- 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

Weather:

- crhroc@noaa.gov



Contact Information:

Brian Fuchs

bfuchs2@unl.edu
402-472-6775

National Drought Mitigation Center
School of Natural Resources
University of Nebraska-Lincoln

