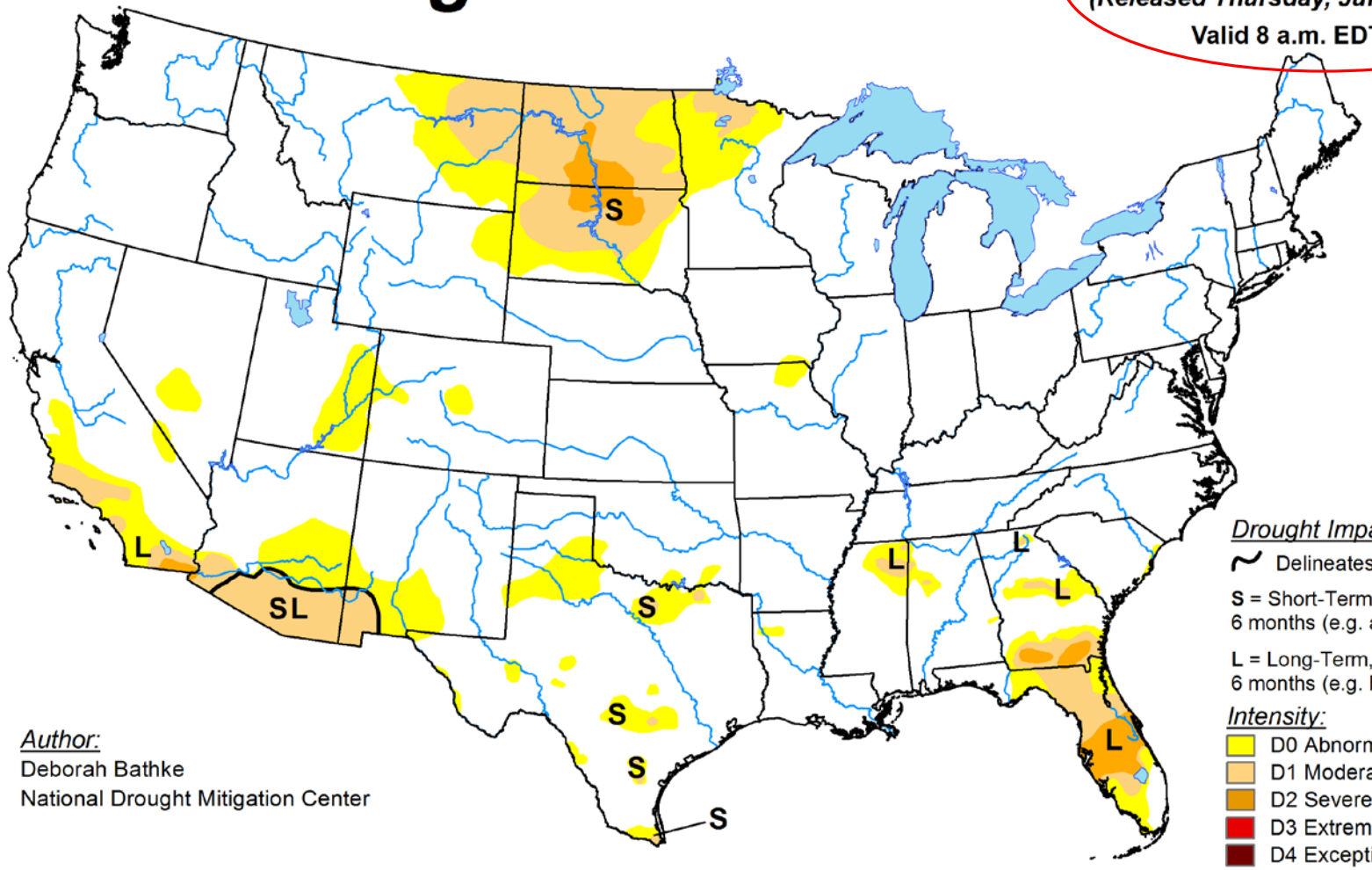
NE Drought Conditions CARC Update: June 4, 2018

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

Current Conditions around Nebraska and the region…

U.S. Drought Monitor

June 6, 2017
(Released Thursday, Jun. 8, 2017)
Valid 8 a.m. EDT



Author:
Deborah Bathke
National Drought Mitigation Center

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
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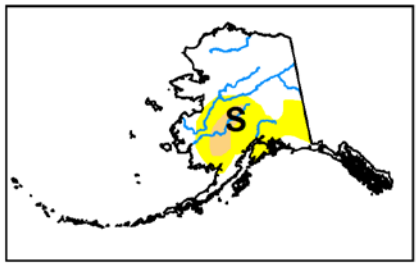
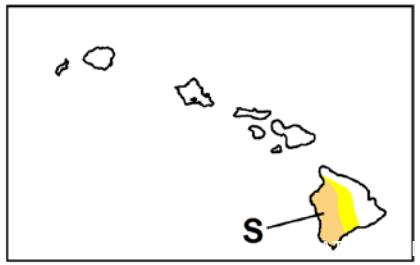
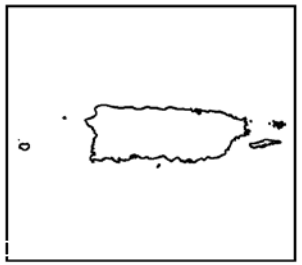




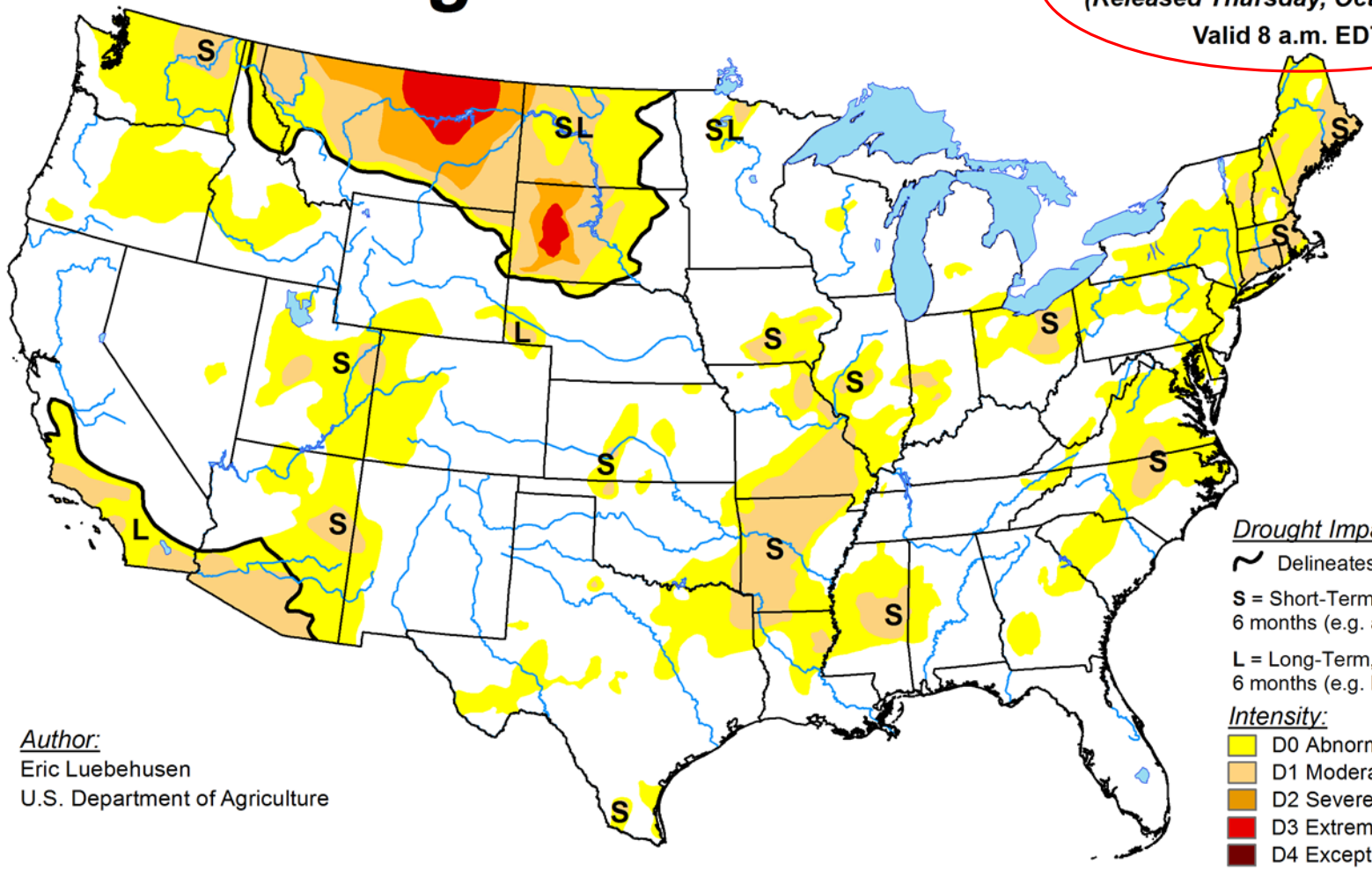


USDA NDMC

http://droughtmonitor.unl.edu/

U.S. Drought Monitor

October 24, 2017
(Released Thursday, Oct. 26, 2017)
Valid 8 a.m. EDT



Author:
Eric Luebehusen
U.S. Department of Agriculture

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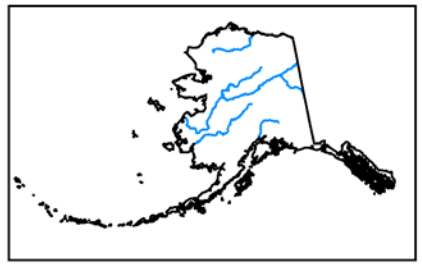
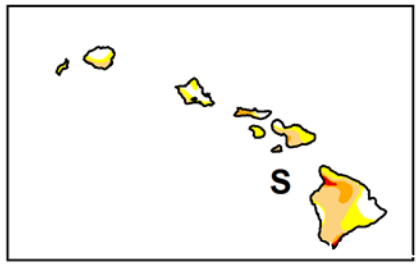
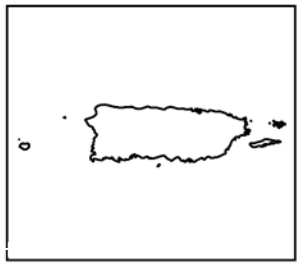






USDA NDMC

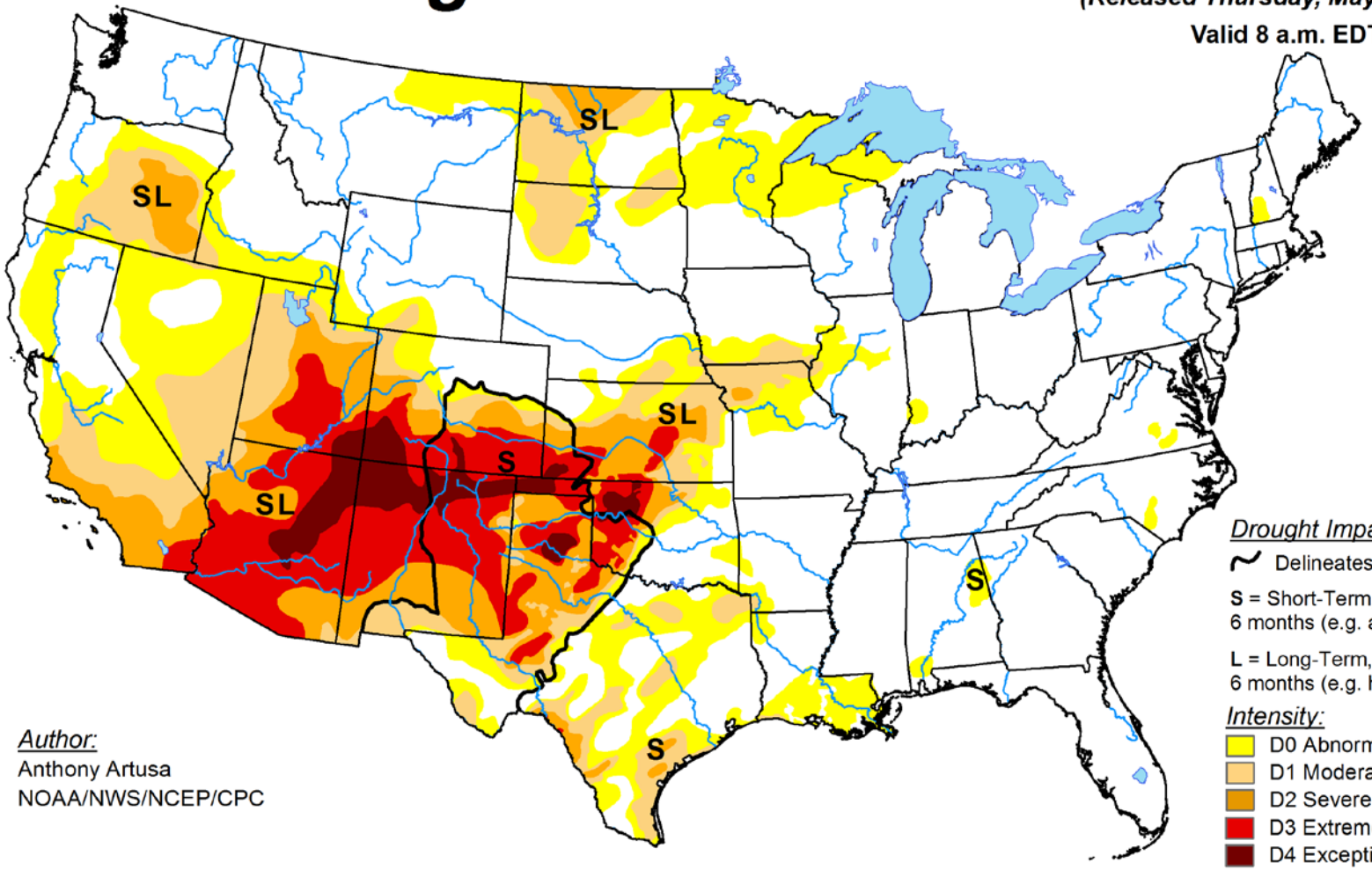
http://droughtmonitor.unl.edu/

U.S. Drought Monitor

May 29, 2018

(Released Thursday, May. 31, 2018)

Valid 8 a.m. EDT



Author:
Anthony Artusa
NOAA/NWS/NCEP/CPC

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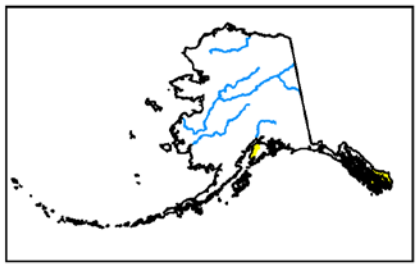
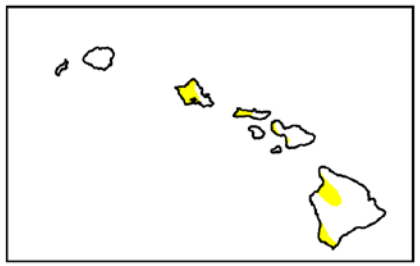
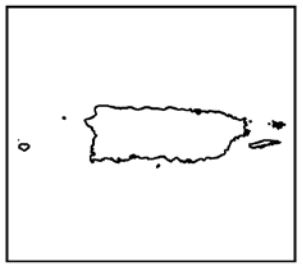
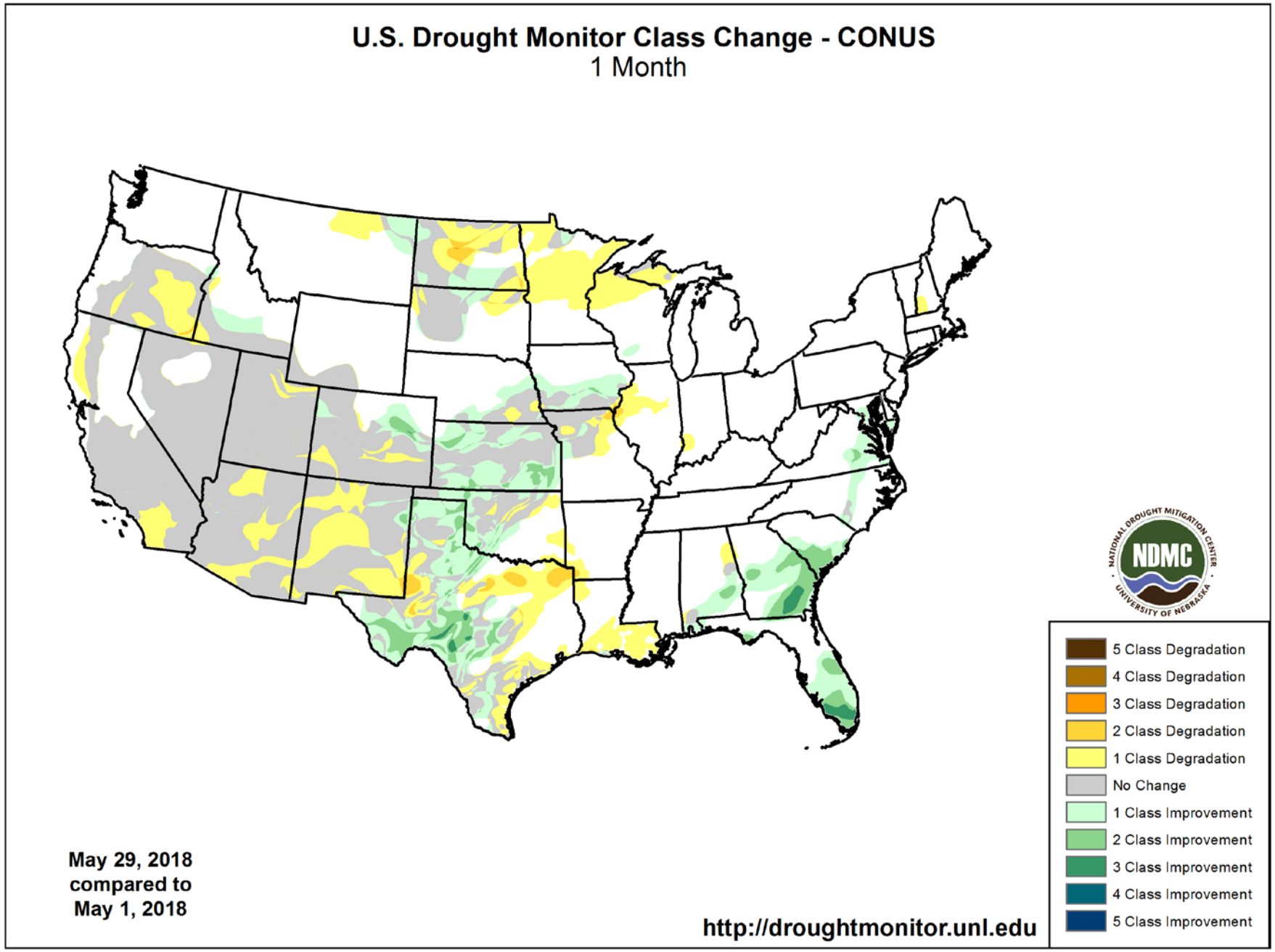






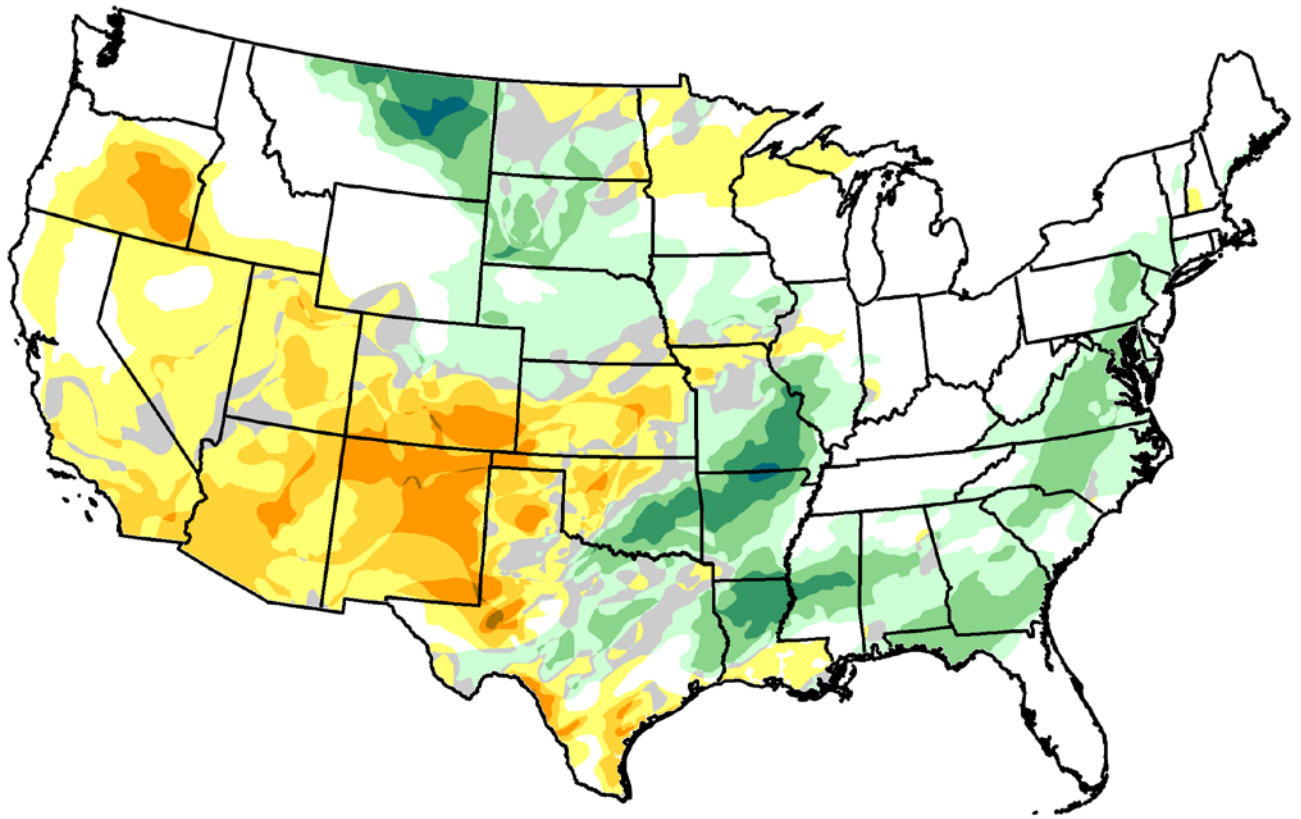
USDA NDMC NOAA

http://droughtmonitor.unl.edu/


U.S. Drought Monitor Class Change - CONUS
1 Month
May 29, 2018
compared to
May 1, 2018
http://droughtmonitor.unl.edu
NDMC
NATIONAL DROUGHT MITIGATION CENTER
UNIVERSITY OF NEBRASKA
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

U.S. Drought Monitor Class Change - CONUS

Start of Calendar Year



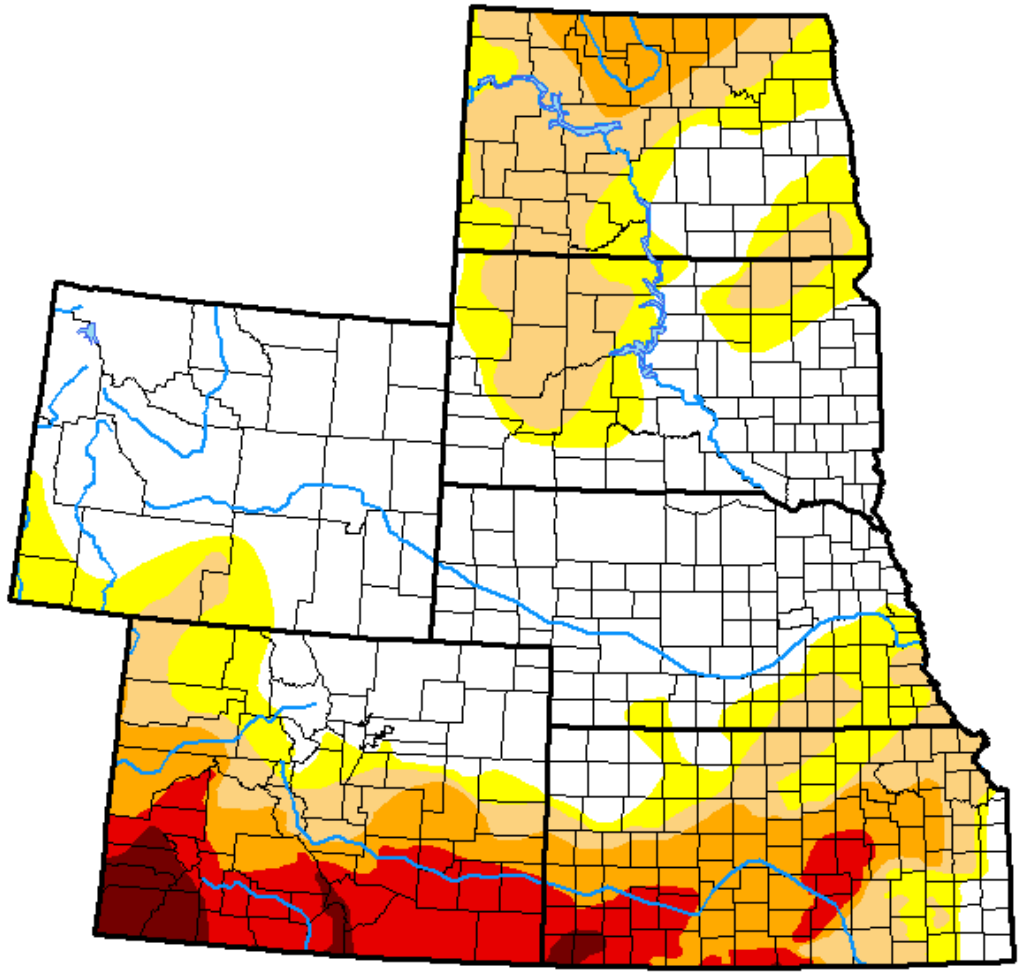
May 29, 2018
compared to
January 2, 2018

http://droughtmonitor.unl.edu

- 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

U.S. Drought Monitor

High Plains



May 29, 2018

(Released Thursday, May. 31, 2018)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	47.84	52.16	36.18	19.70	9.44	1.83
Last Week *05-22-2018*	46.55	53.45	35.58	18.96	9.44	1.85
3 Months Ago *02-27-2018*	31.01	68.99	44.54	15.45	3.09	0.00
Start of Calendar Year *01-02-2018*	19.28	80.72	29.19	6.34	0.90	0.00
Start of Water Year *09-26-2017*	56.15	43.85	21.11	8.37	1.32	0.06
One Year Ago *05-30-2017*	74.75	25.25	6.46	0.00	0.00	0.00

Intensity:

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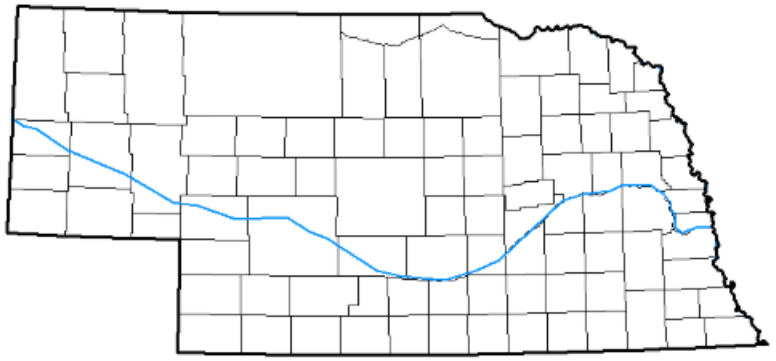
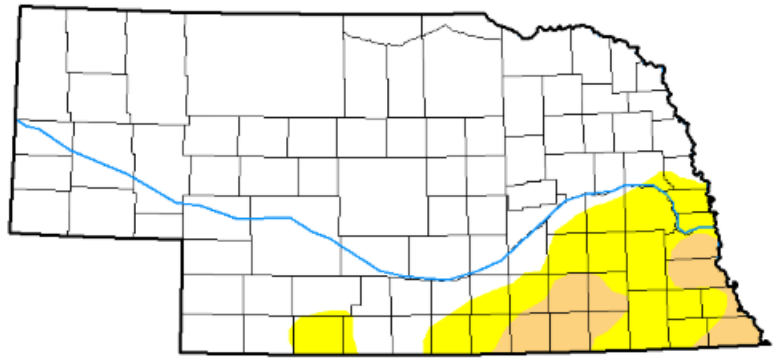
Drought Classification

None | D0 (Abnormally Dry) | D1 (Moderate Drought) | D2 (Severe Drought) | D3 (Extreme Drought) | D4 (Exceptional Drought)





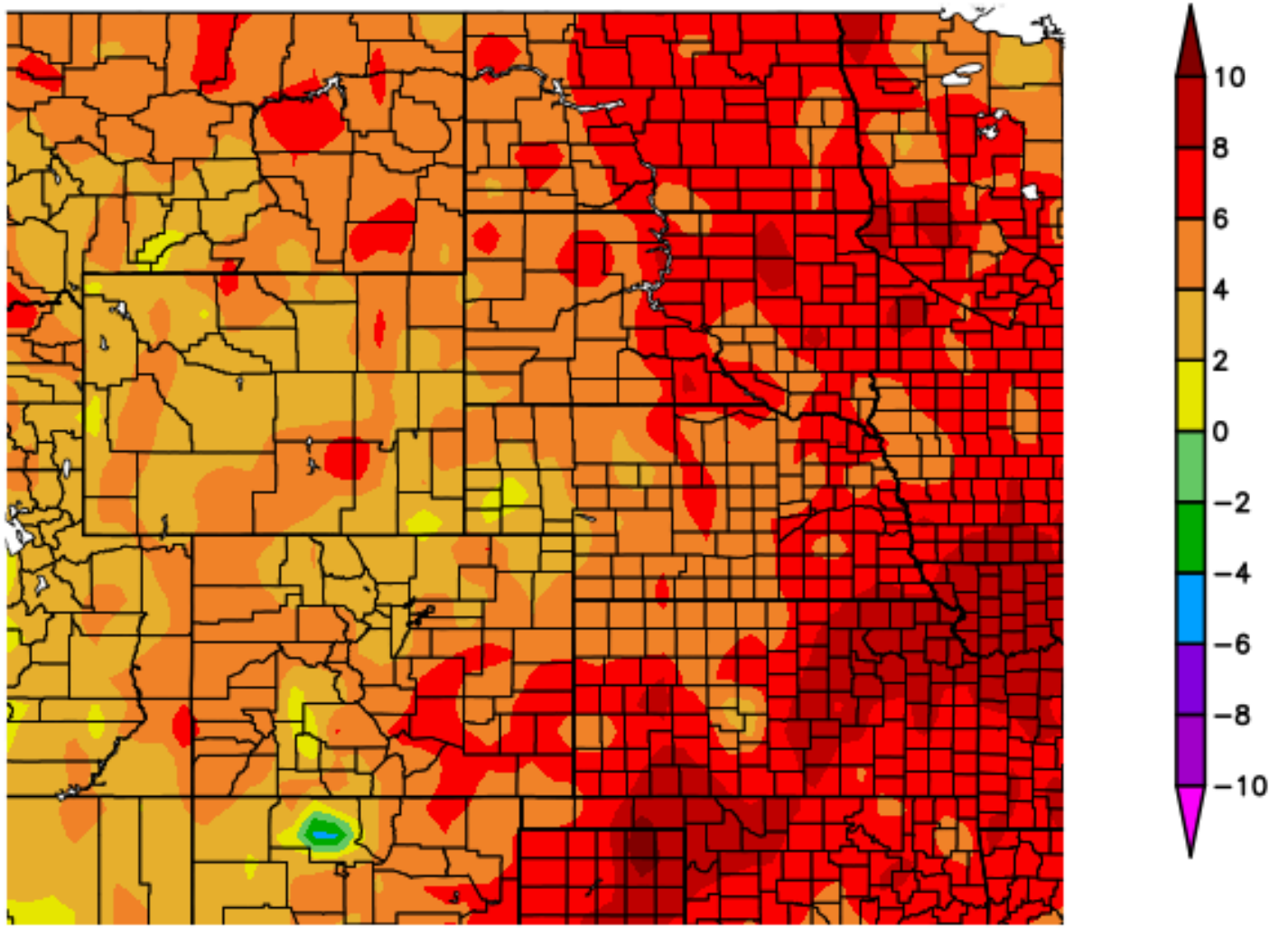
PNG PDF JPG May 30, 2017

PNG PDF JPG May 29, 2018

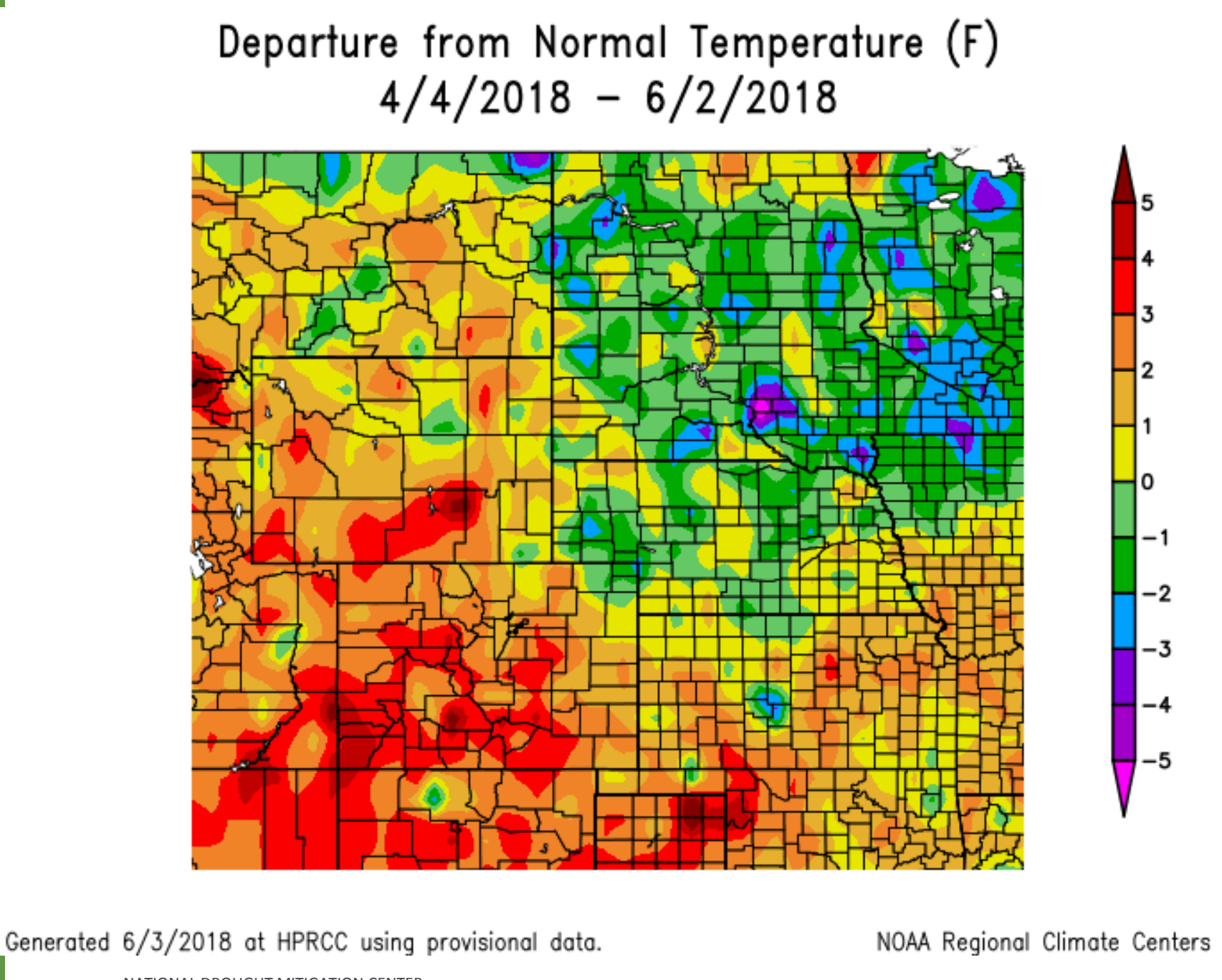
Statistics Comparison

Week	None	D0-D4	D1-D4	D2-D4	D3-D4	D4	DSCI
2017-05-30	100.00	0.00	0.00	0.00	0.00	0.00	0
2018-05-29	81.90	18.10	5.37	0.00	0.00	0.00	23
Change	-18.10	18.10	5.37	0.00	0.00	0.00	23

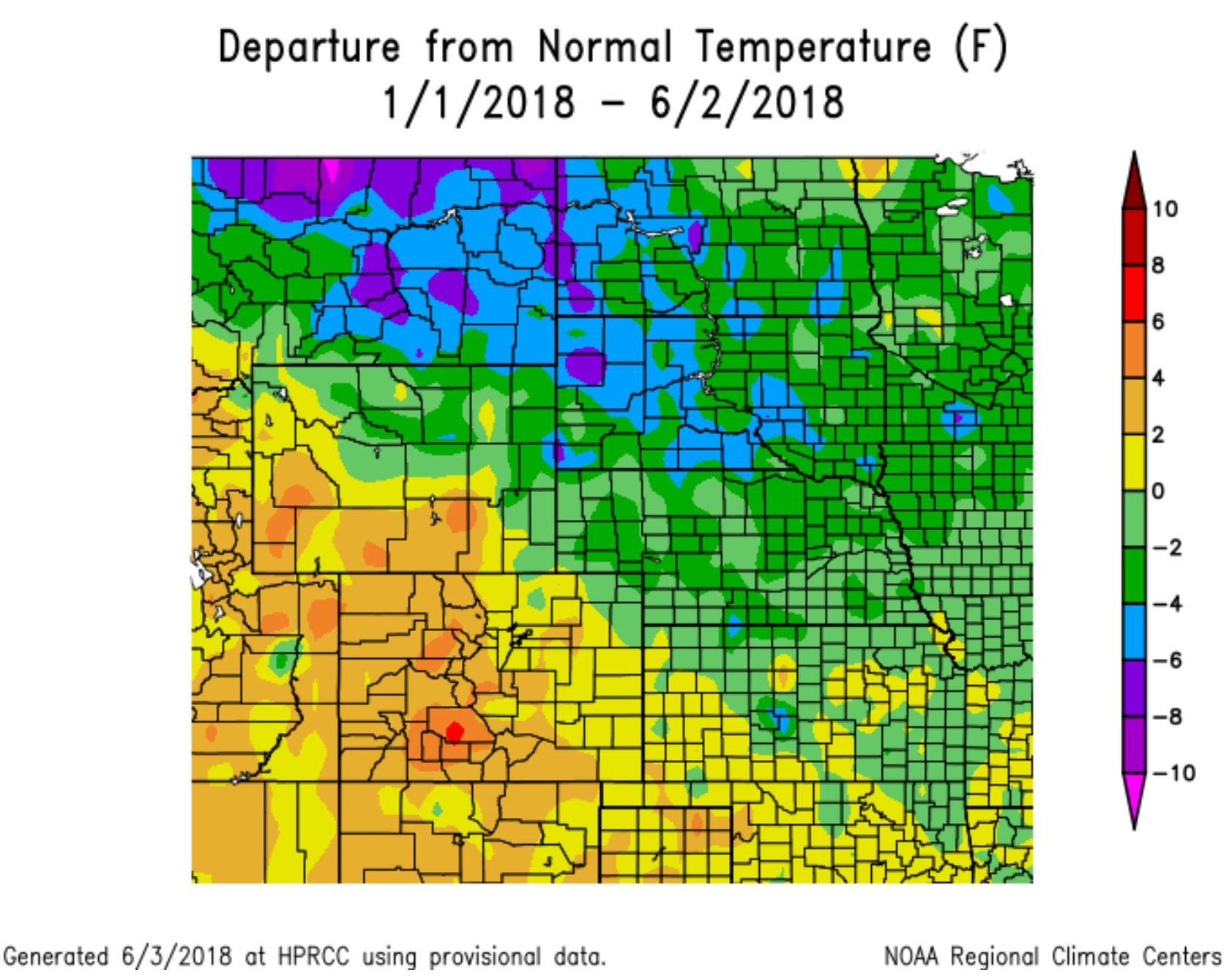
Departure from Normal Temperatures over the last 30 days



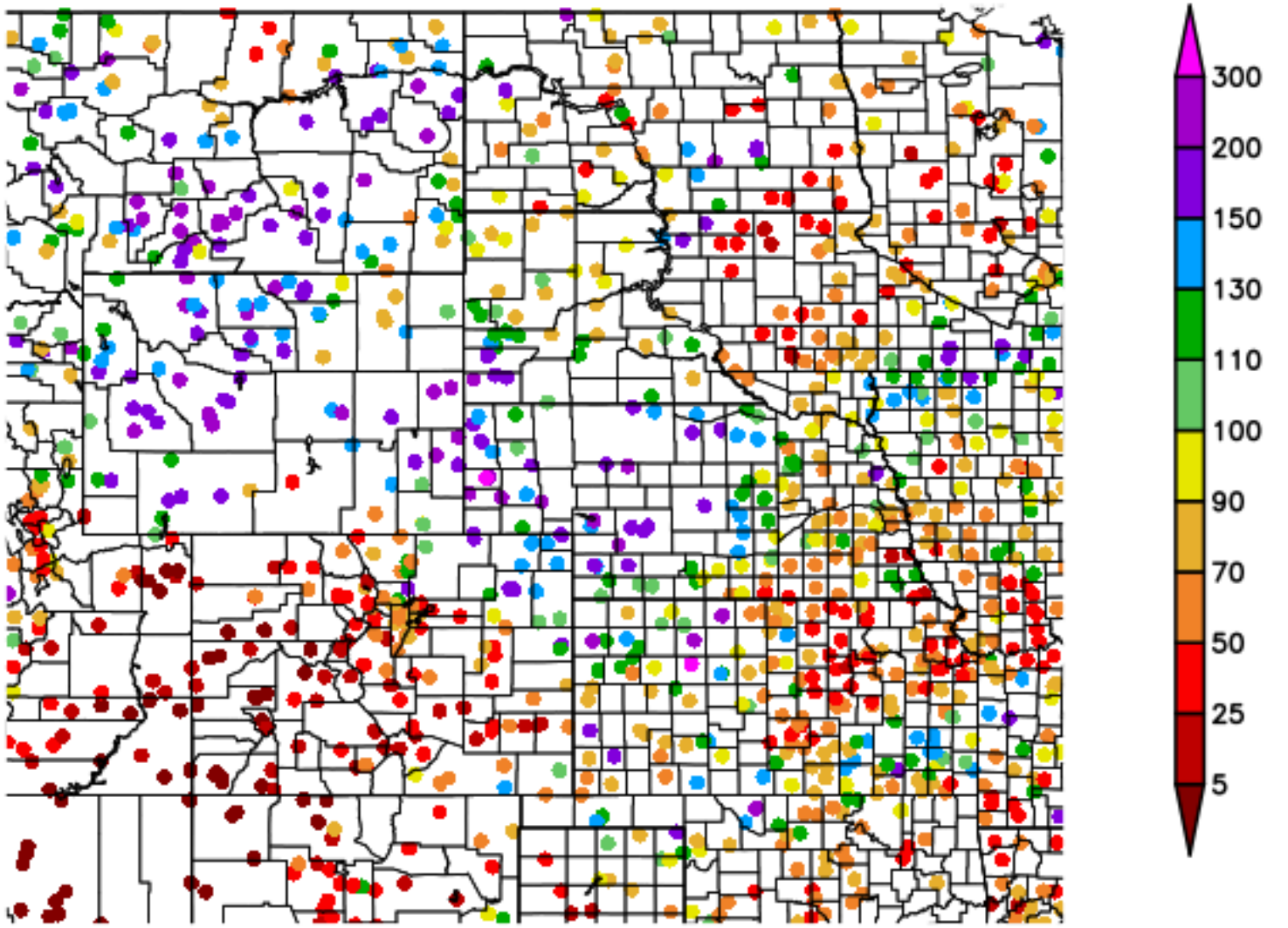
Departure from Normal Temperatures over the last 60 days



Departure from Normal Temperatures for the Calendar Year



Percent of Normal Precipitation over the last 30 days



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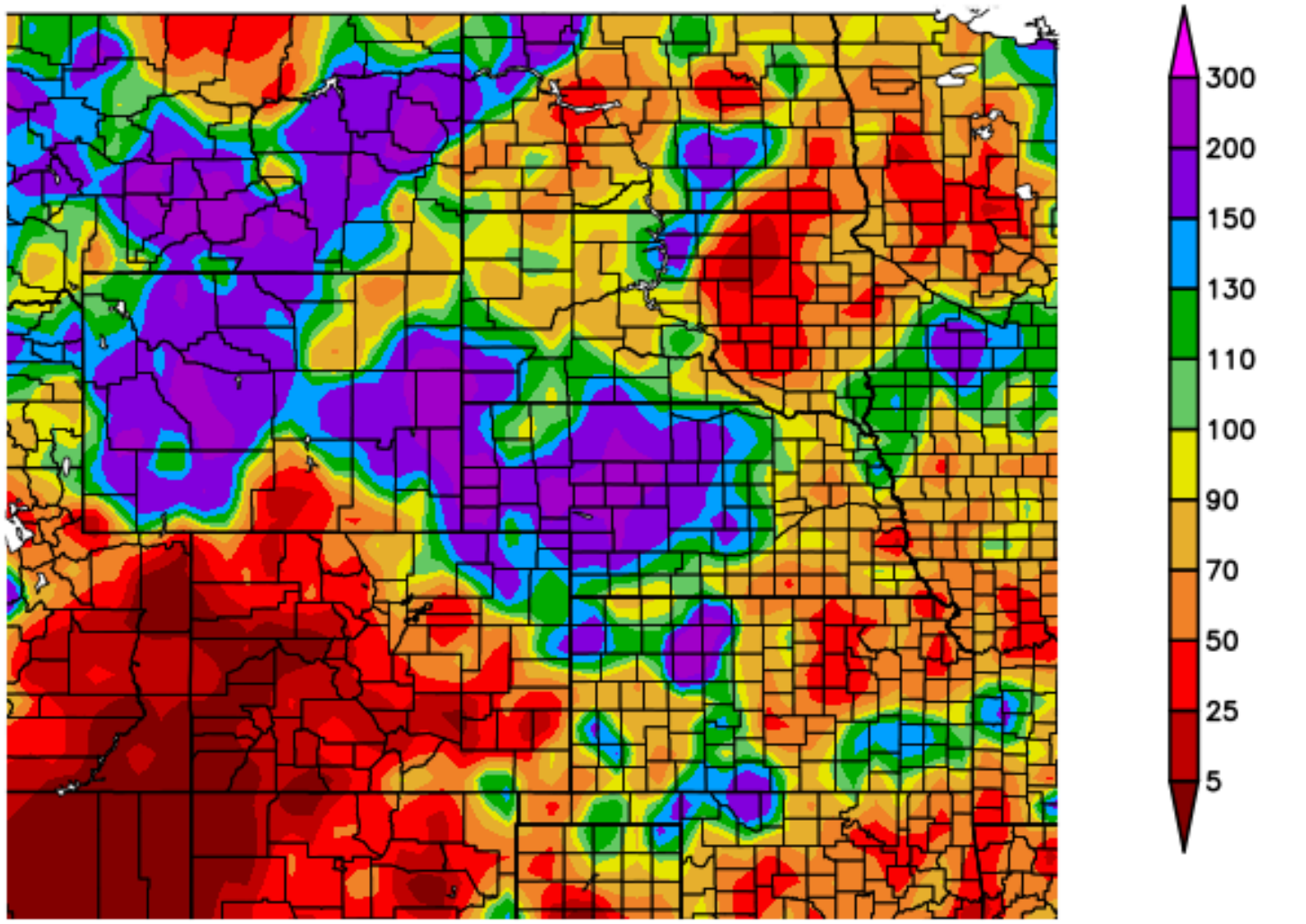

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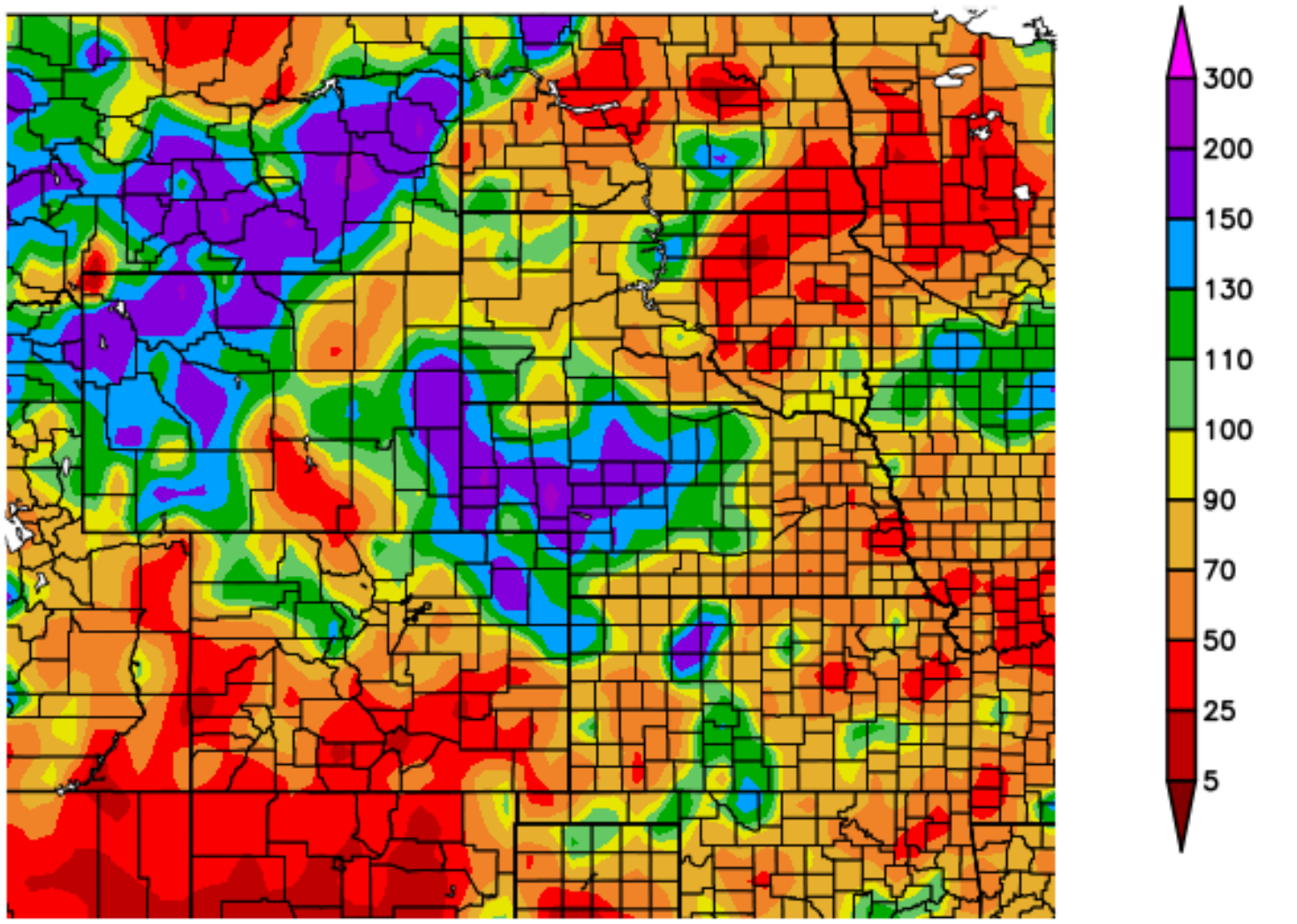
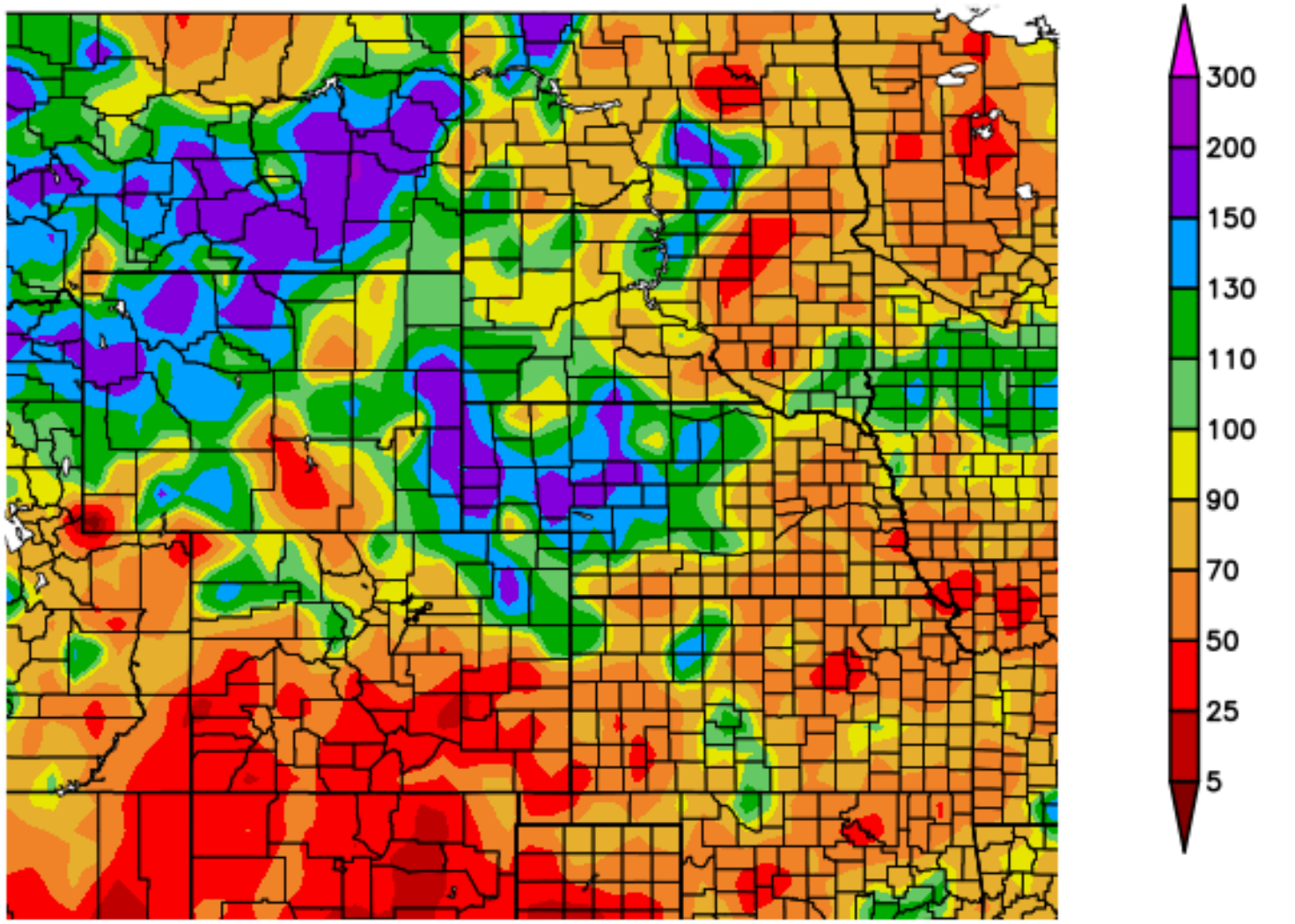
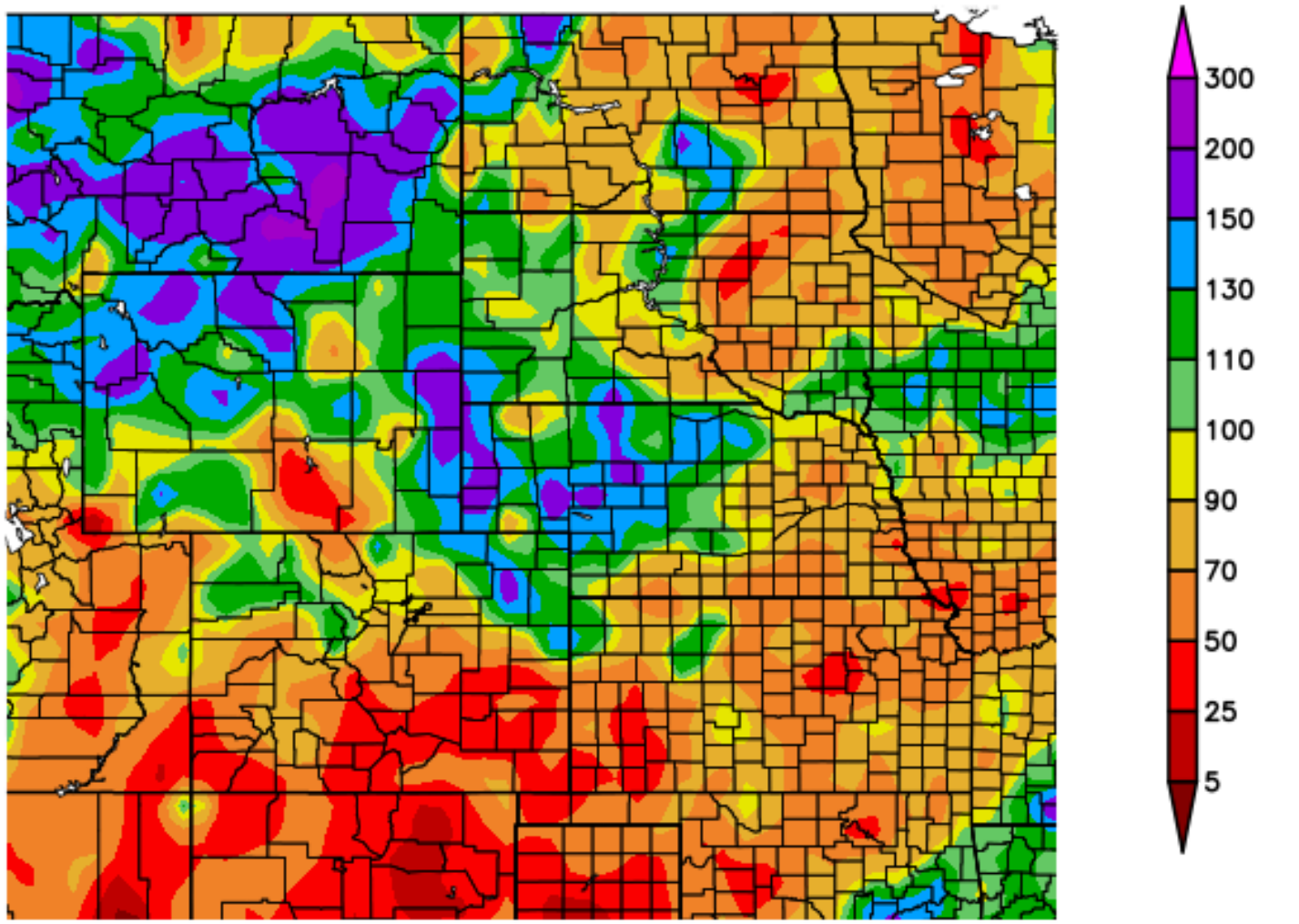


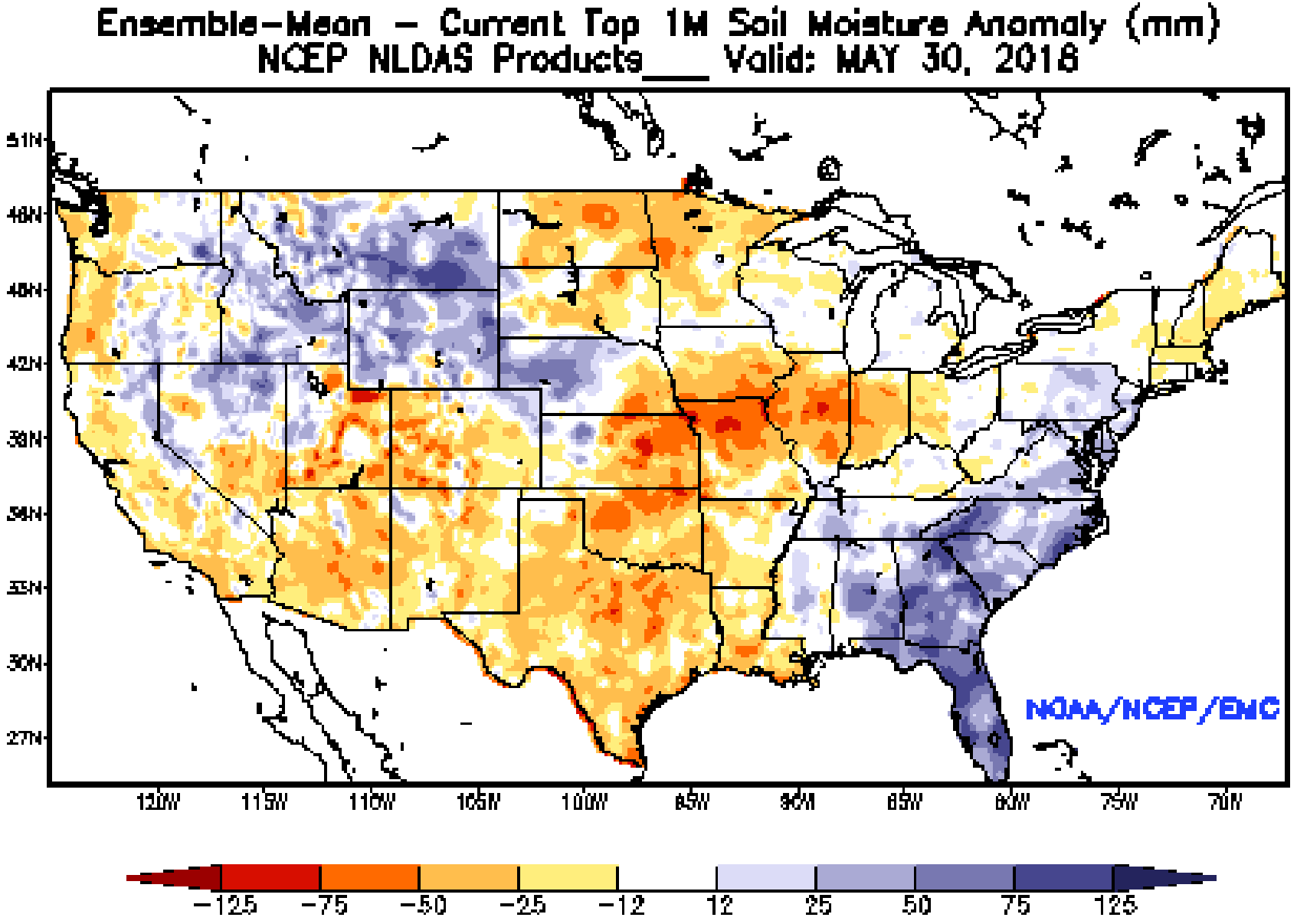
Percent of Normal Precipitation over the last 90 days



Percent of Normal Precipitation for the calendar year



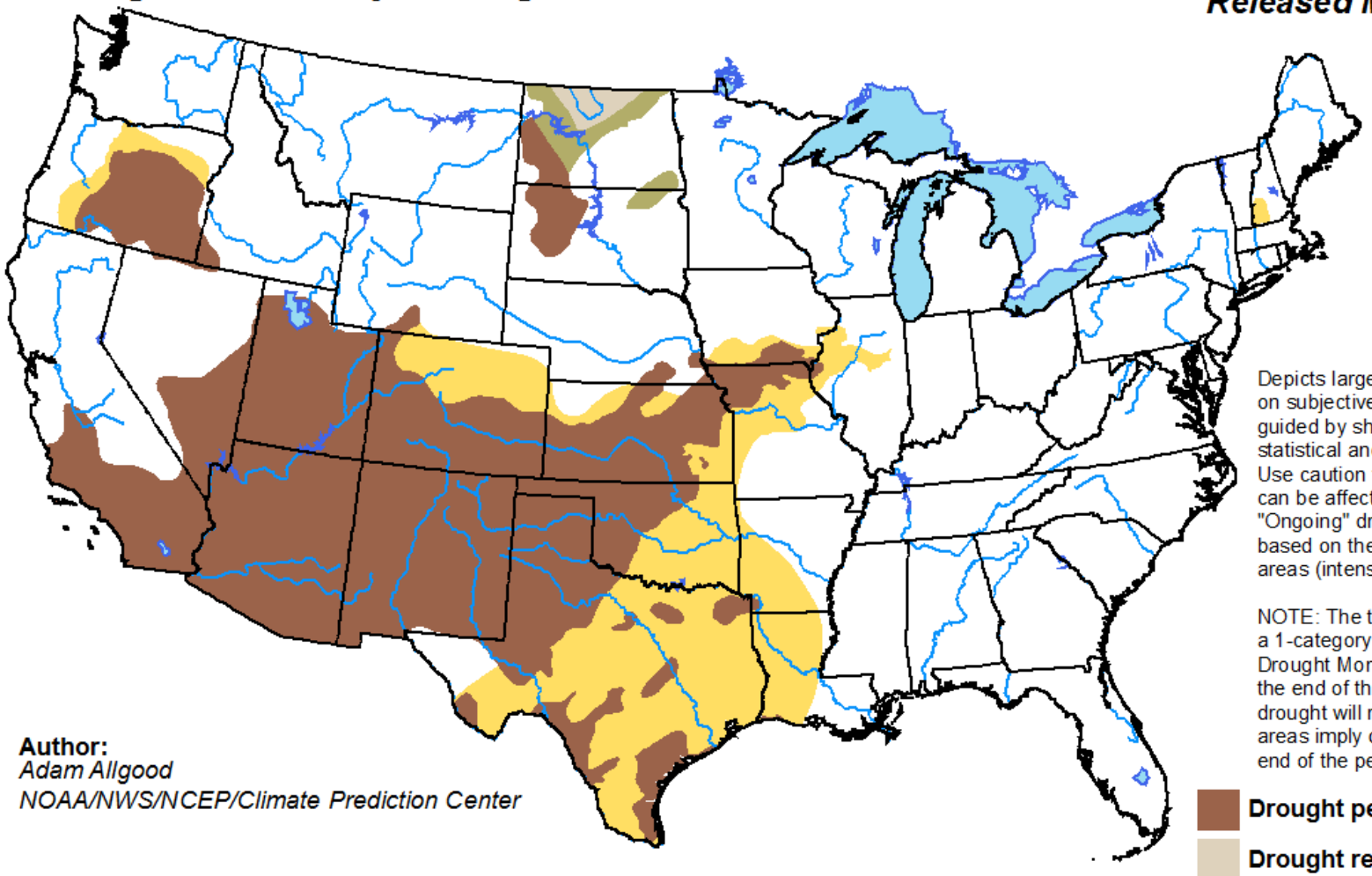
NLDAS Soil Moisture Model: Current Soil Moisture Anomaly



U.S. Monthly Drought Outlook

Drought Tendency During the Valid Period

Valid for June 2018
Released May 31, 2018



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).

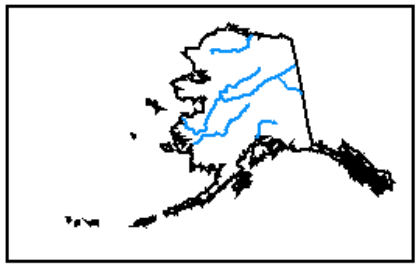
Drought persists

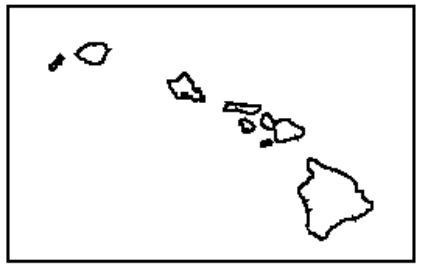
Drought remains but improves

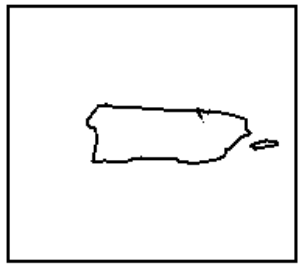
Drought removal likely

Drought development likely

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





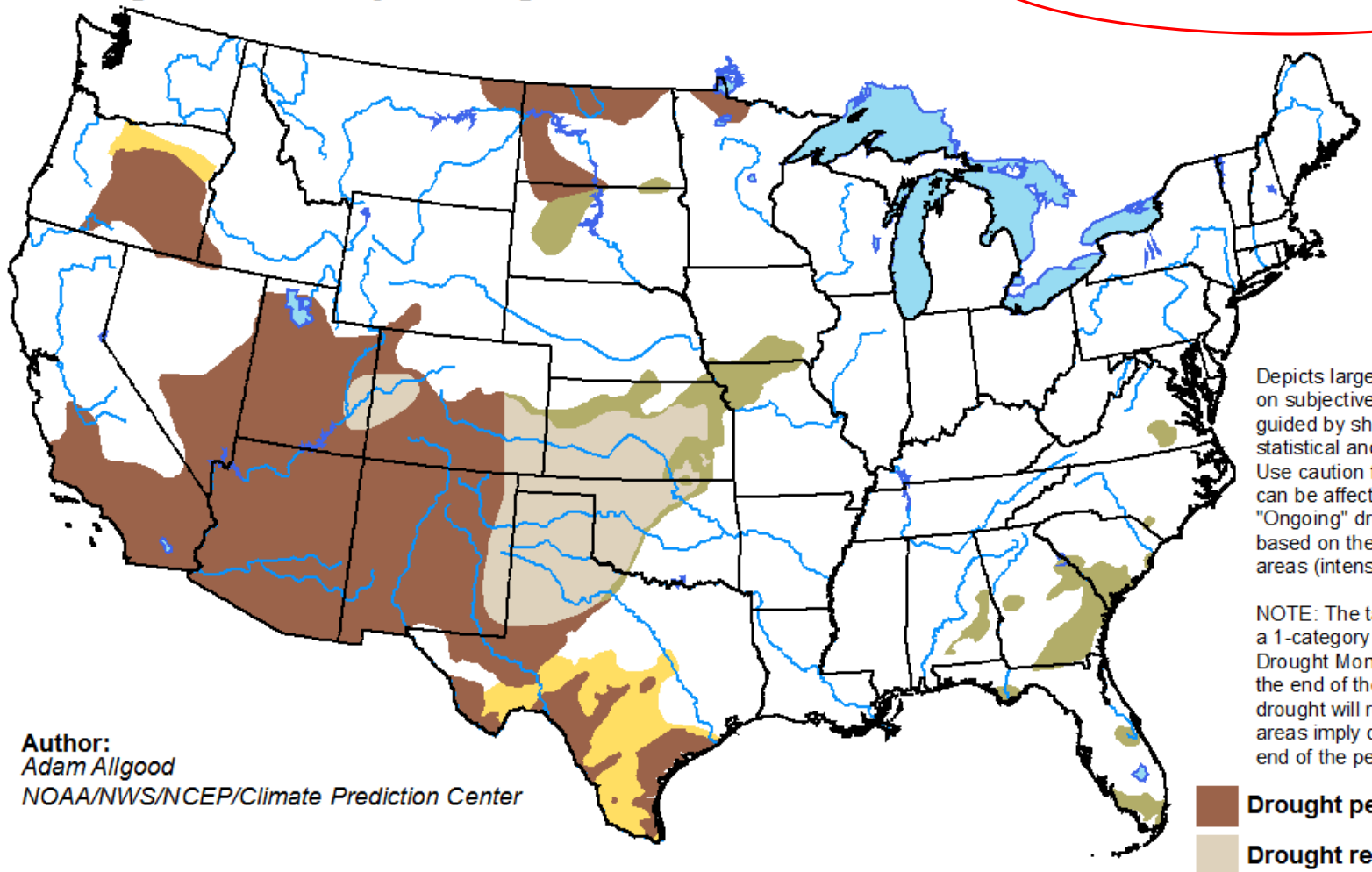


http://go.usa.gov/3eZGd

U.S. Seasonal Drought Outlook

Drought Tendency During the Valid Period

Valid for May 17 - August 31, 2018
Released May 17, 2018



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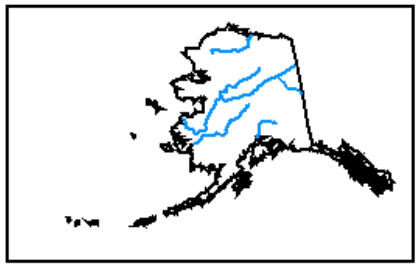
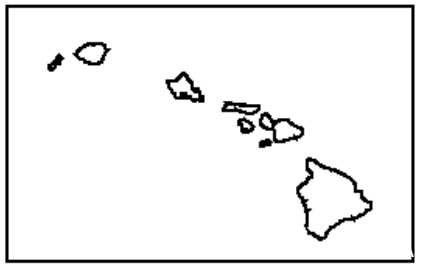
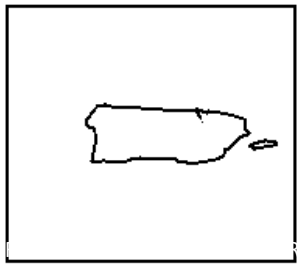






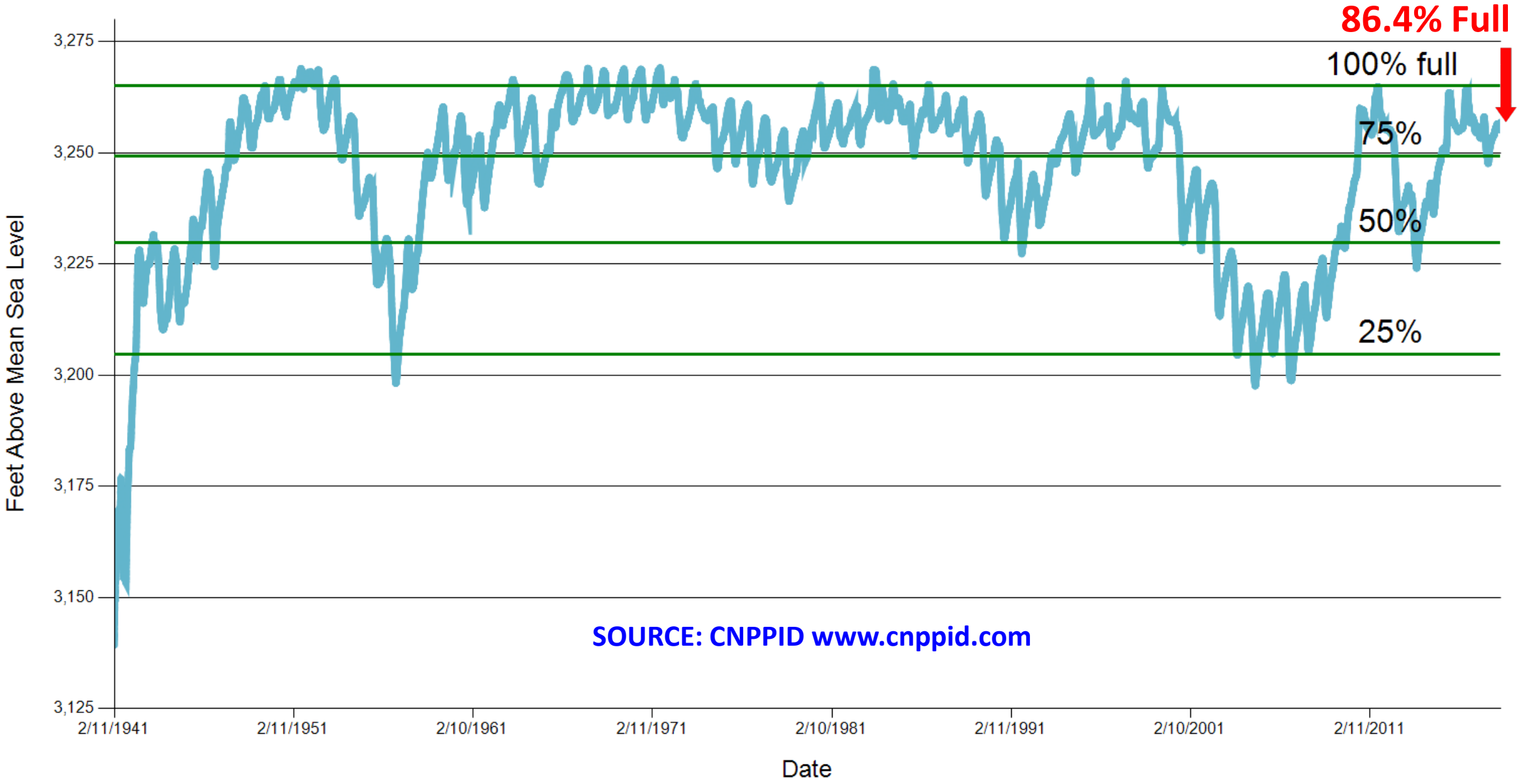
http://go.usa.gov/3eZ73

Climate/Drought Summary

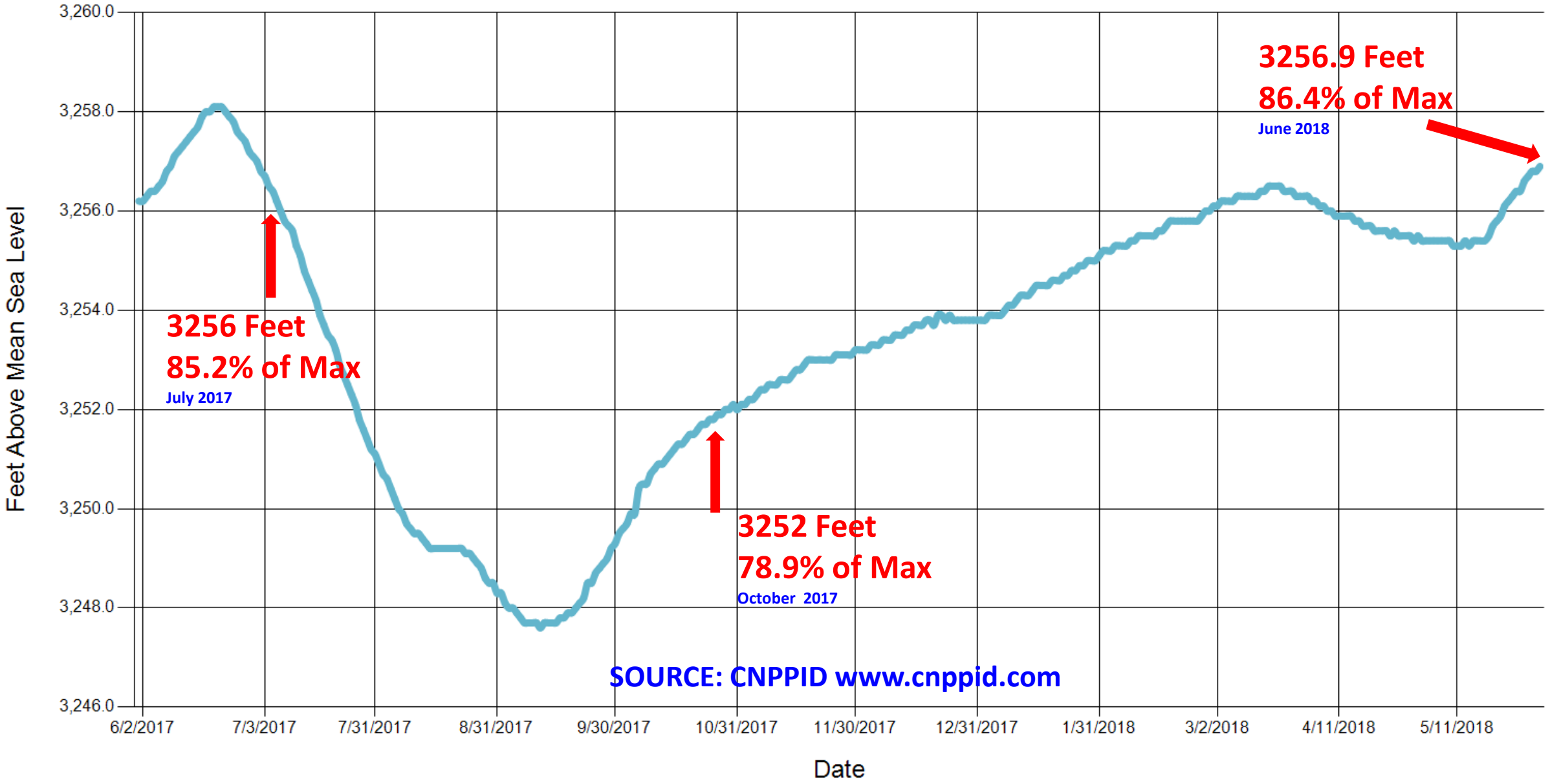
- Colder than normal conditions have dominated the state and region so far in 2018 with Nebraska averaging about 2-4 degrees F below normal through the end of May.
- The western portions of Nebraska have had well above normal precipitation for the year while the eastern portions have been below with a sharp transition area in the central part of the state.
- After a very cool April, May was very warm over the state with most areas 2-4+ degrees F above normal.
- Nebraska is mostly drought free with just over 5% of the state currently in drought. The eastern half of the state is primed for drought development with the ongoing hot and dry conditions being experienced into the first part of Summer.
- The monthly and seasonal drought outlooks do not show drought conditions developing in Nebraska through the end of August 2018.

Nebraska Water Supply Update…

Lake McConaughy Elevation since 1941



Lake McConaughy Elevation (One Year)



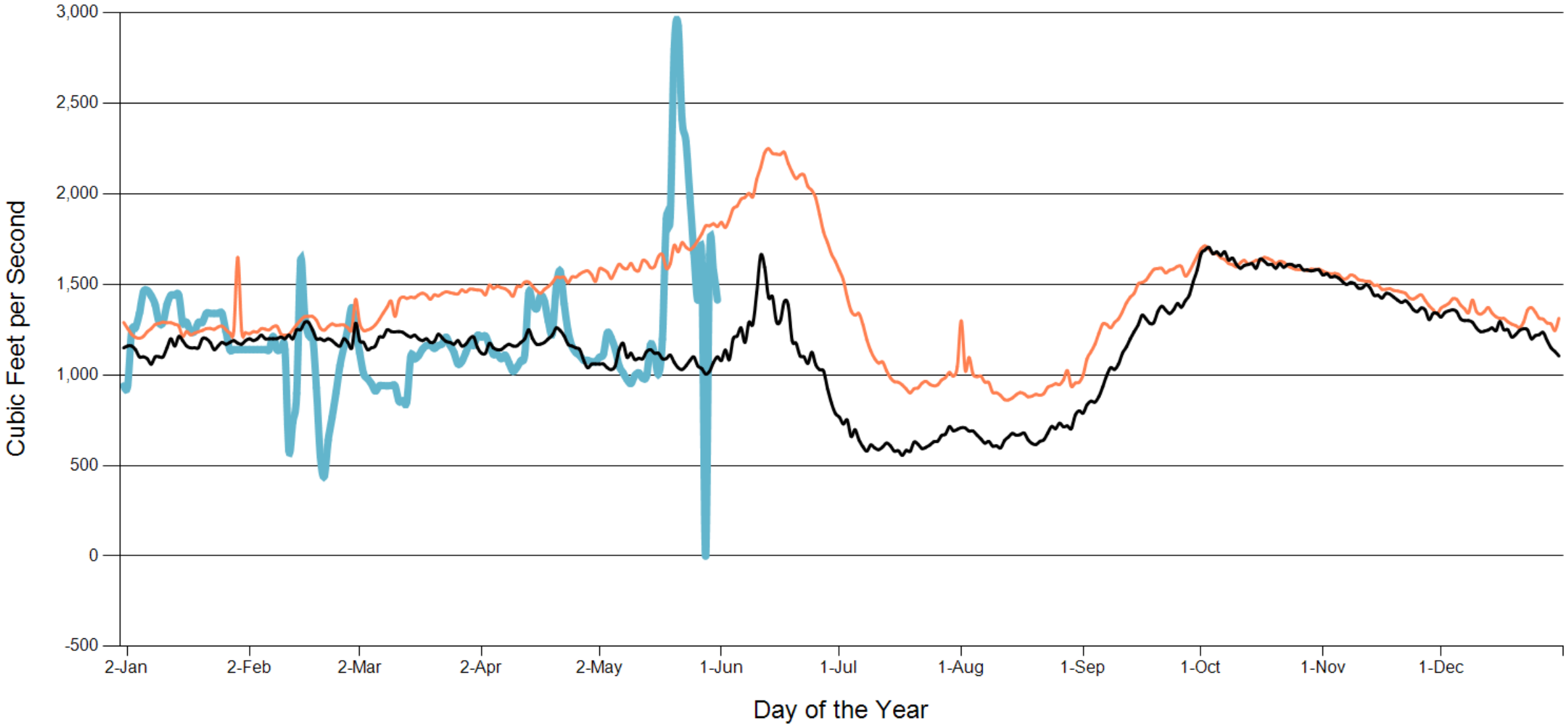
June 2018 CARC Meeting

River & Canal Flows

Station	Today (Cubic Feet per Second)	1 Week Ago	1 Month Ago	1 Year Ago
Inflows to McConaughy	1,414	1,849	1,052	2,735
Total Outflows from McConaughy	821	907	1,093	2,016
North Platte at Keystone	48	43	32	301
Keystone Diversion	773	864	1,061	1,715
North Platte at North Platte	487	433	394	452
South Platte at Roscoe	947	1150	198	3890
South Platte at North Platte	858	912	302	3,755
Supply Canal Diversion	2,149	2,237	1,819	2,206
Platte at Overton	2,792	1,991	1,517	4,171
Platte at Kearney	2600	2210	1820	3780
Platte at Grand Island	2610	2690	1670	4450

SOURCE: CNPPID www.cnppid.com

Lake McConaughy Inflows



Lake McConaughy

Civil engineer Cory Steinke reported that the North and South Platte Basin snowpack levels are declining with not much runoff remaining, and the current inflows are slightly below average for this time of year. He also mentioned that the drought conditions currently plaguing the Oklahoma panhandle appear to be expanding northward and could possibly impact Central's irrigated area this summer.

SOURCE: CNPPID News Release, May 7, 2018

www.cnppid.com

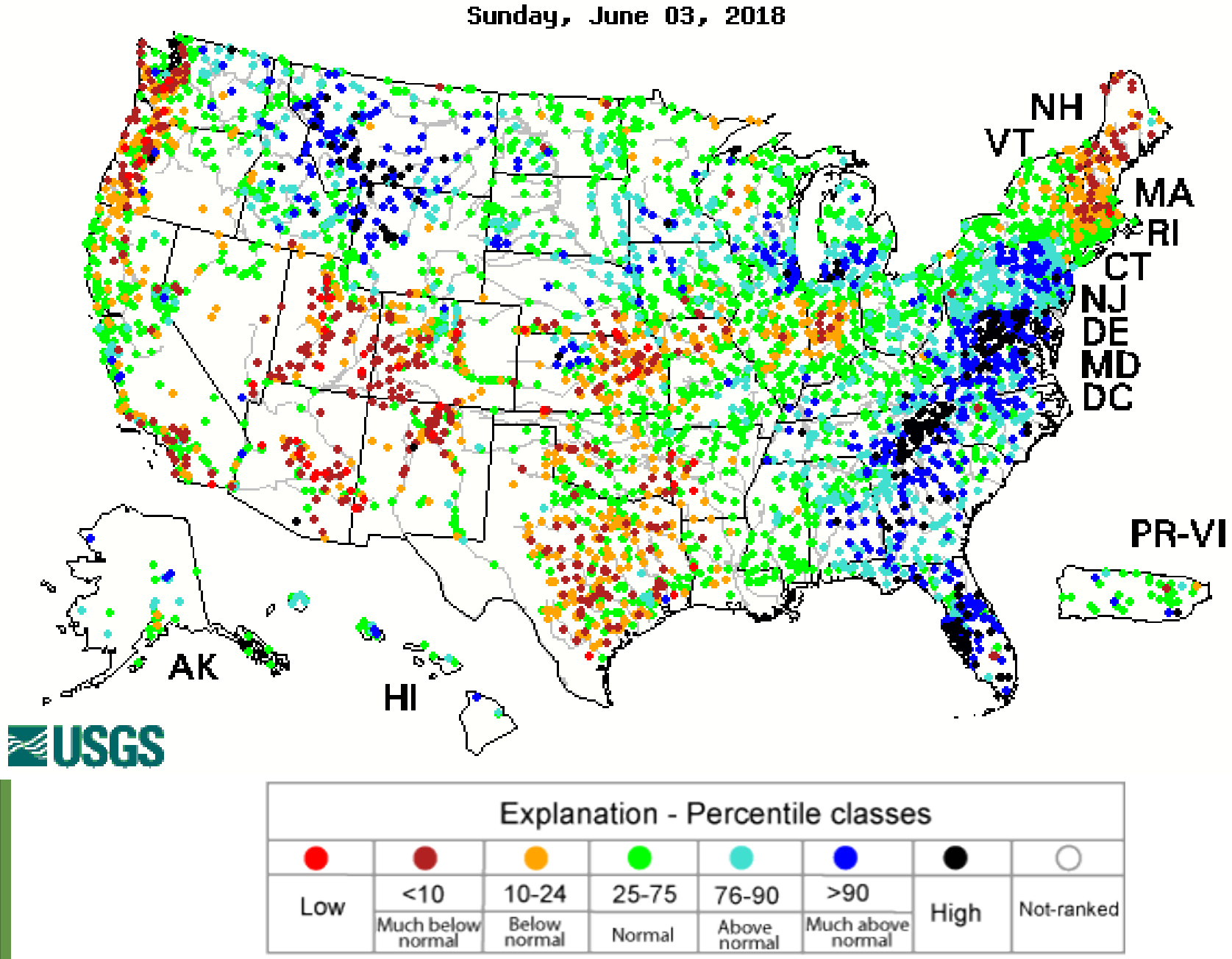
Lake McConaughy

- Irrigation Division Manager Dave Ford presented results from this spring's collection of data from 138 of Central's observation wells located in Gosper, Phelps and Kearney counties. Analysis of the data shows that changes over a one-year period from spring 2017 to spring 2018 were minimal, with less than one foot of change in either direction. Over a ten-year period, about 40 percent of the wells, primarily in the western half of the irrigated area near Elwood Reservoir, showed increases of up to 17 feet. However, over the same ten-year period, the eastern half of the irrigated area showed a generalized decline in the water table.
- On the supply canal's 74 accounts, 3,843 acre-feet were delivered for an average of 8.2 inches/acre.

SOURCE: CNPPID News Release, October 2, 2017

www.cnppid.com

14-day average streamflow compared to historical streamflow for the day of year



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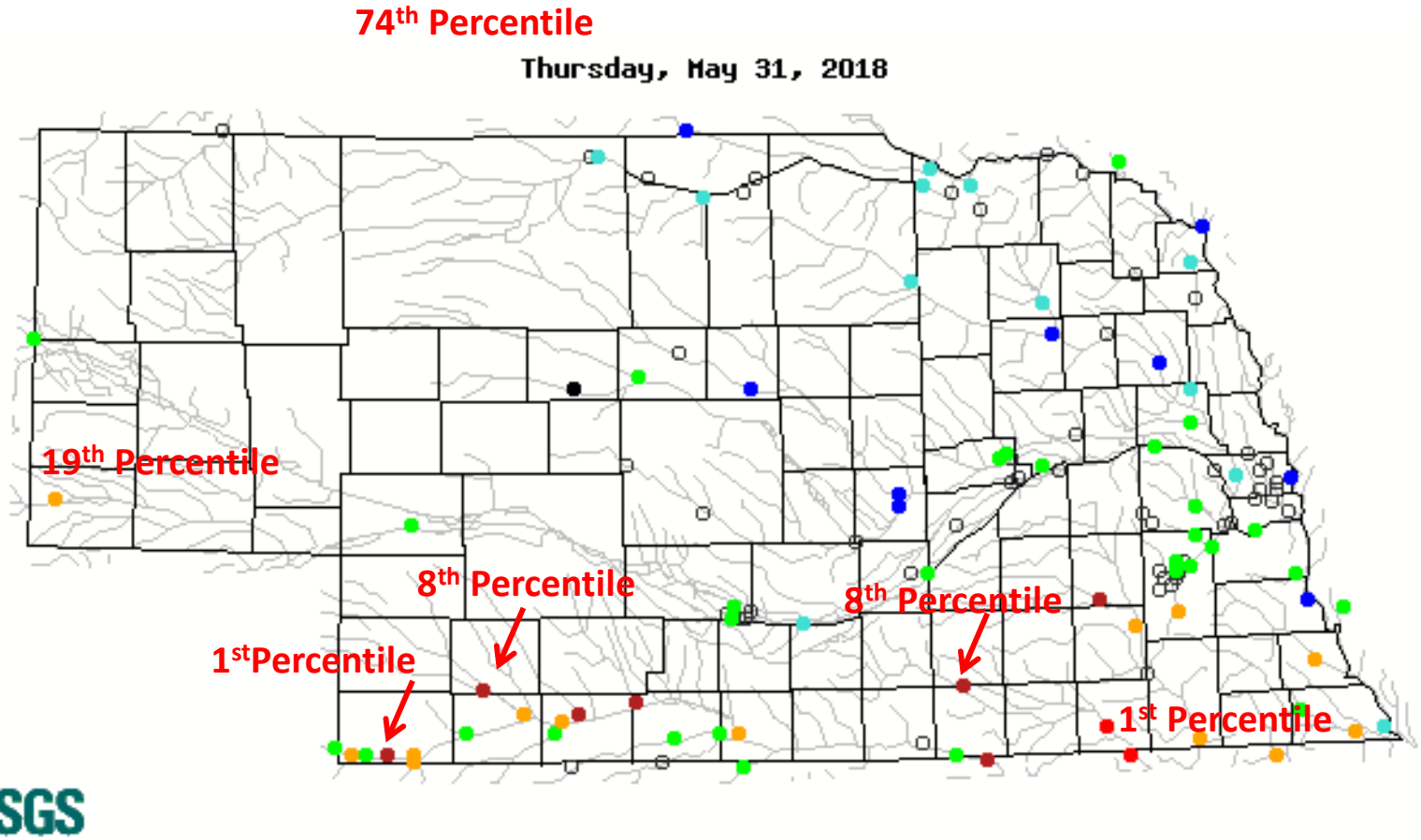


Explanation - Percentile classes							
Low	<10	10-24	25-75	76-90	>90	High	Not-ranked
	Much below normal	Below normal	Normal	Above normal	Much above normal		

Republican River Basin

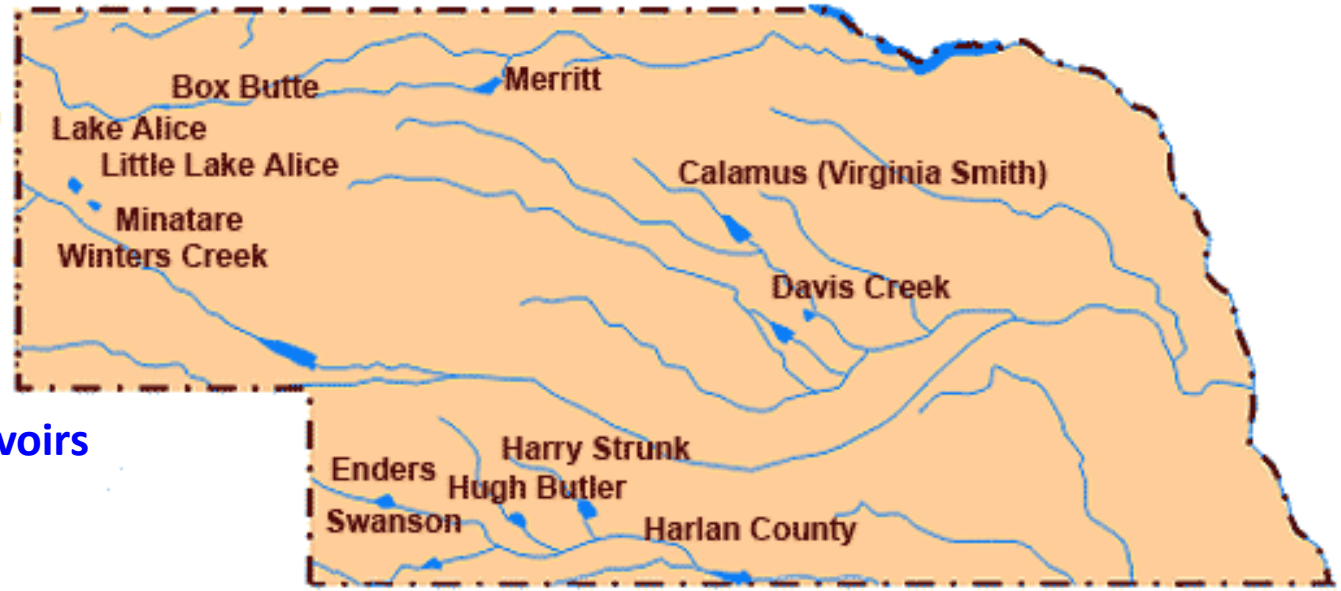
Hugh Butler: 50.7%(41.8%) of conservation pool

Enders: 22.7% (19.7%) of conservation pool

Harry Strunk: 100%(53.0%) of conservation pool

Swanson: 63.2% (44.0%) of conservation pool

*values in red are from the last CARC meeting in October 2017.



Source: BOR http://www.usbr.gov/gp/lakes_reservoirs

Republican River Basin

Harlan County Current Conditions

*values in red are from the last CARC meeting in October 2017.

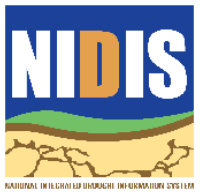
- ✓Conservation Pool is 82.2% full (69.7%)
- ✓258,075 Acre-Feet in storage compared to 218,826 Acre-Feet (AF) of water in storage during October 2017
- ✓Last year at this time, 262,586 AF was in storage (June 2017)
- ✓Historical average storage for this time of the year is 265,172AF

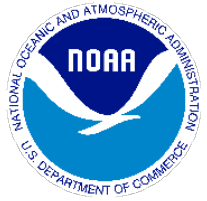
Source: BOR http://www.usbr.gov/gp/lakes_reservoirs/

Water Supply Summary

- Lake McConaughy is currently 86.4 percent of capacity which is higher than in October 2017 (last CARC meeting) and slightly higher compared to levels in June 2017.
- The Republican River basin reservoirs are higher than in October as water accumulated after the irrigation season and from winter runoff.
- Harlan County Reservoir is holding about 40,000 acre-feet more water now than in October 2017.
- Harlan County is holding about 4,500 acre-feet less water now than last year at this time and is slightly below average for this time of year.
- All reservoir levels and storage should see a steady increases until the irrigation deliveries begin.

OUR PARTNERS





Any Questions ?

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