

NE Drought Conditions CARC Update: July 10, 2017



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

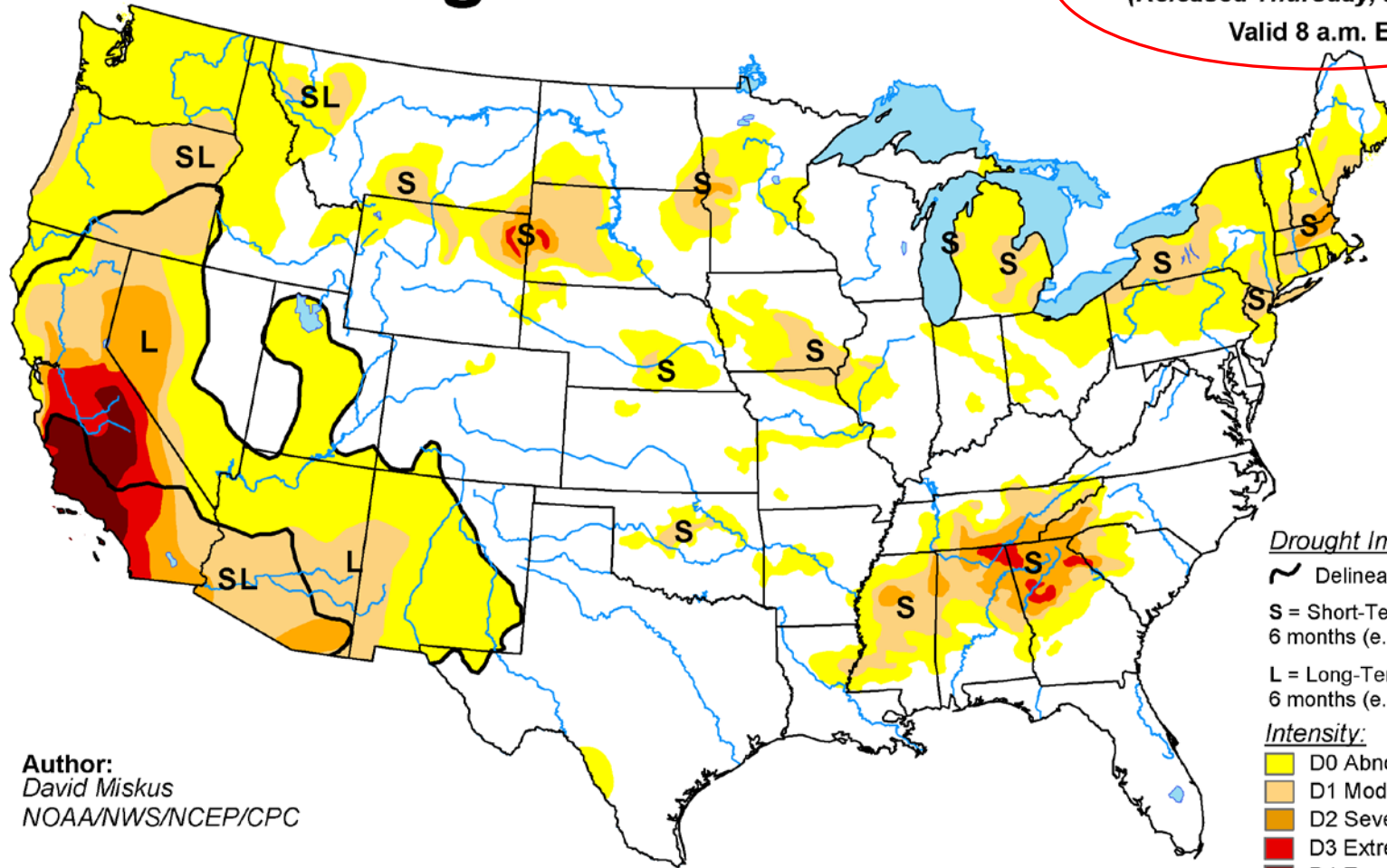
Current Conditions around Nebraska and the region...

U.S. Drought Monitor

July 5, 2016

(Released Thursday, Jul. 7, 2016)

Valid 8 a.m. EDT



Author:
David Miskus
NOAA/NWS/NCEP/CPC

Drought Impact Types:

~ Delineates dominant impacts

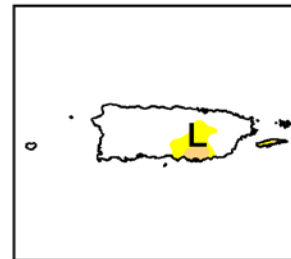
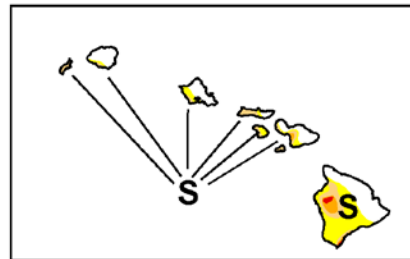
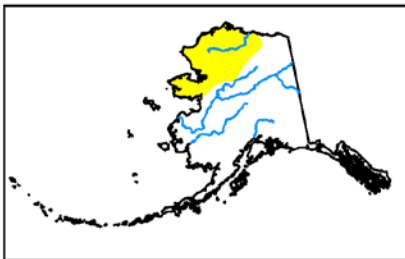
S = Short-Term, typically less than 6 months (e.g. agriculture, grasslands)

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.



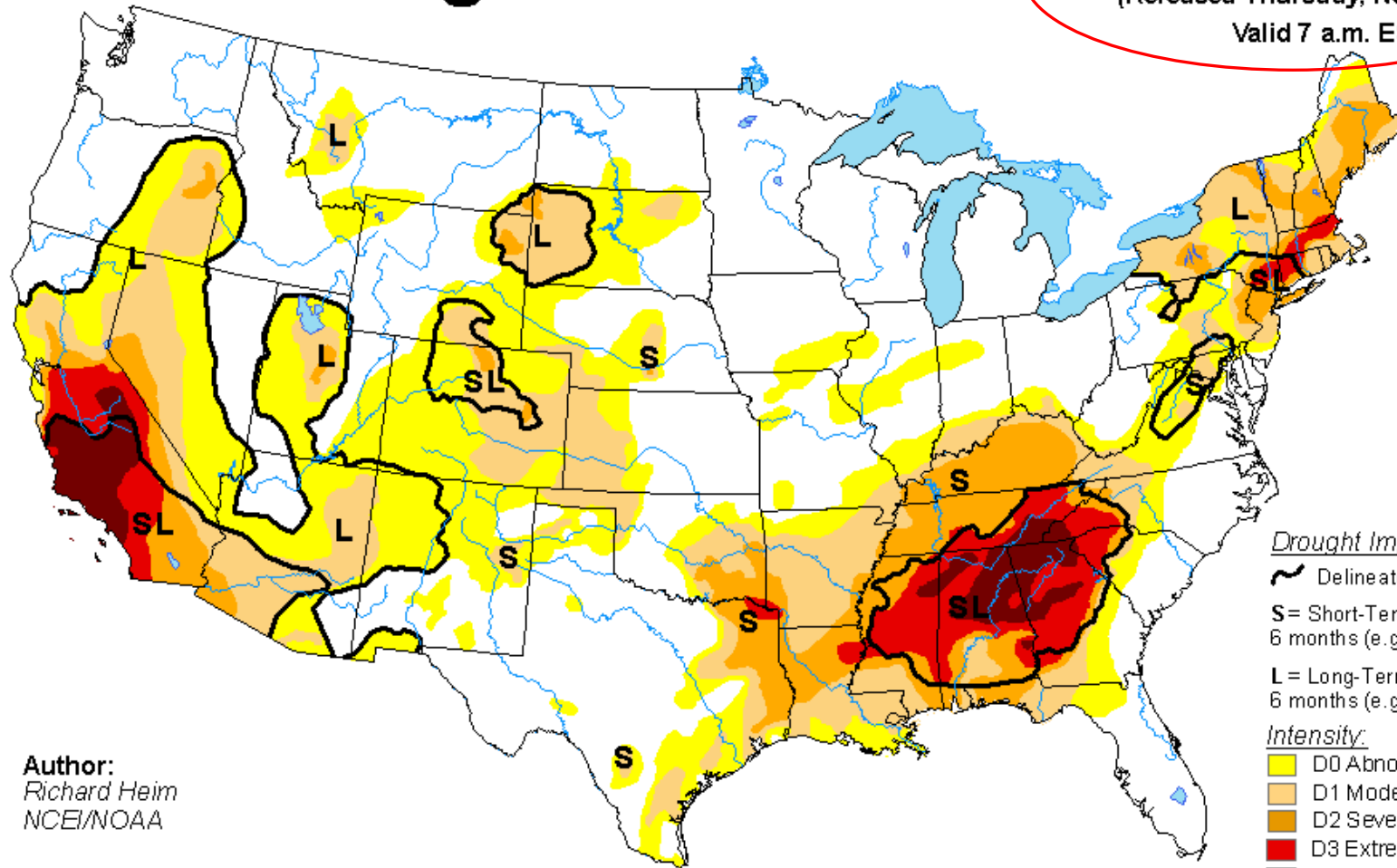
<http://droughtmonitor.unl.edu/>

U.S. Drought Monitor

November 15, 2016

(Released Thursday, Nov. 17, 2016)

Valid 7 a.m. EST



Author:
Richard Heim
NCEI/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:

Yellow D0 Abnormally Dry

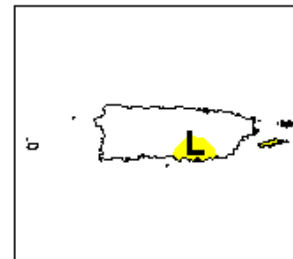
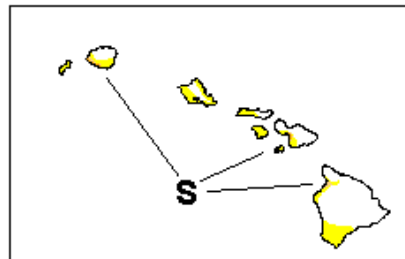
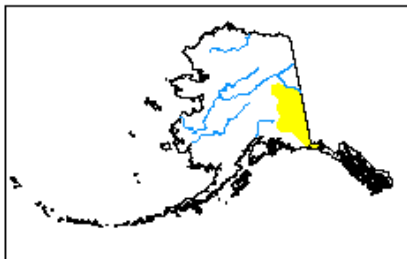
Light Orange D1 Moderate Drought

Dark Orange D2 Severe Drought

Red D3 Extreme Drought

Dark Red D4 Exceptional Drought

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



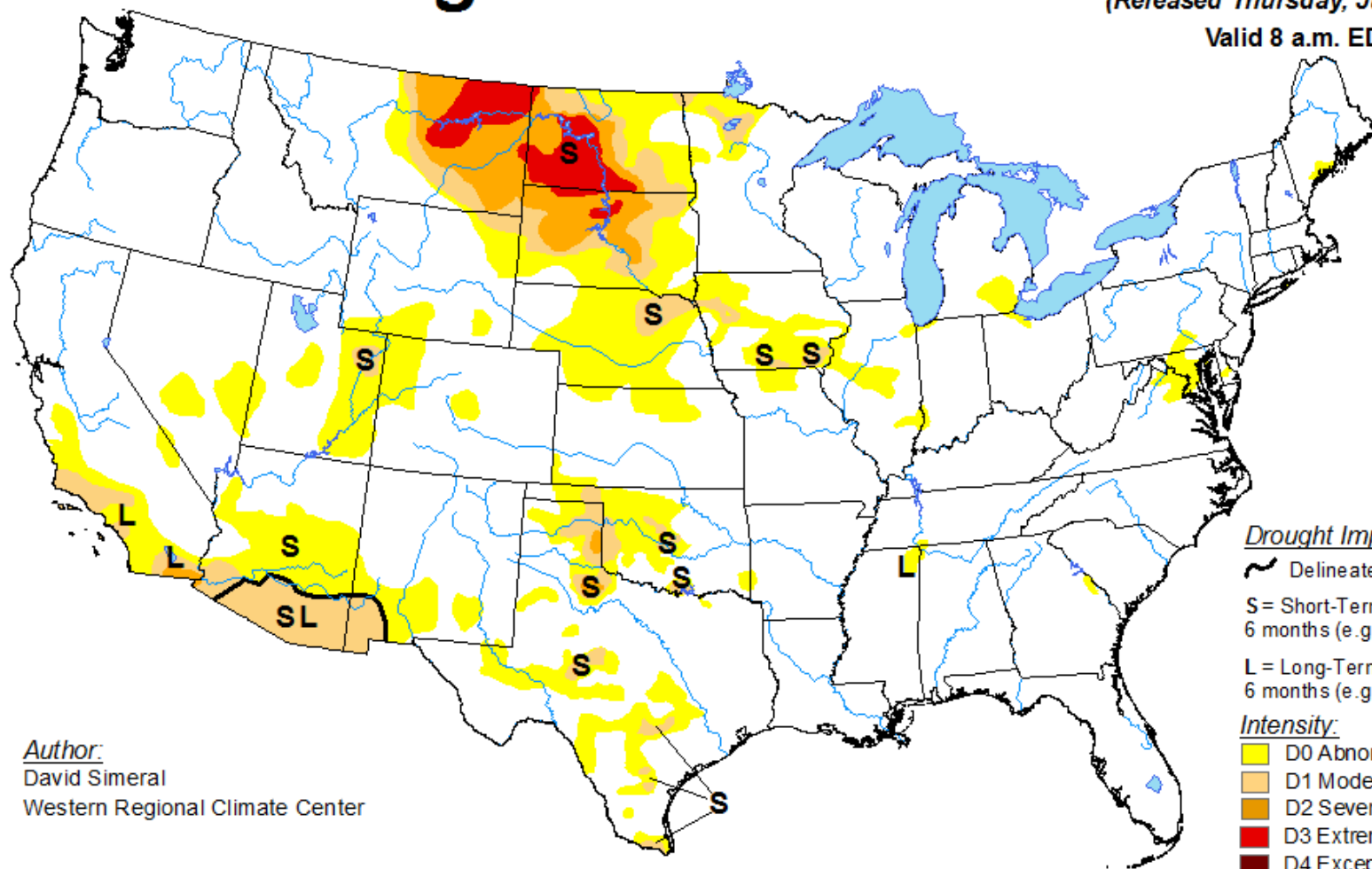
<http://droughtmonitor.unl.edu/>

U.S. Drought Monitor

July 4, 2017

(Released Thursday, Jul. 6, 2017)

Valid 8 a.m. EDT



Author:

David Simeral

Western Regional Climate 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:

Yellow D0 Abnormally Dry

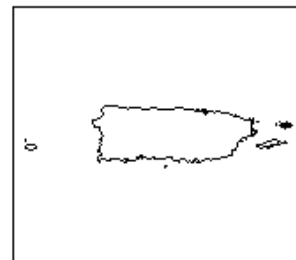
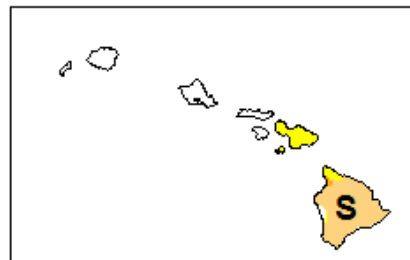
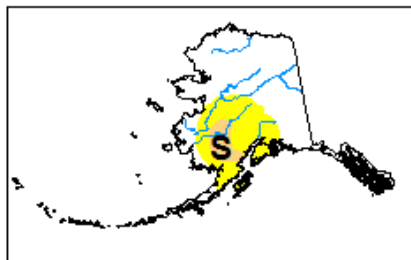
Orange D1 Moderate Drought

Brown D2 Severe Drought

Red D3 Extreme Drought

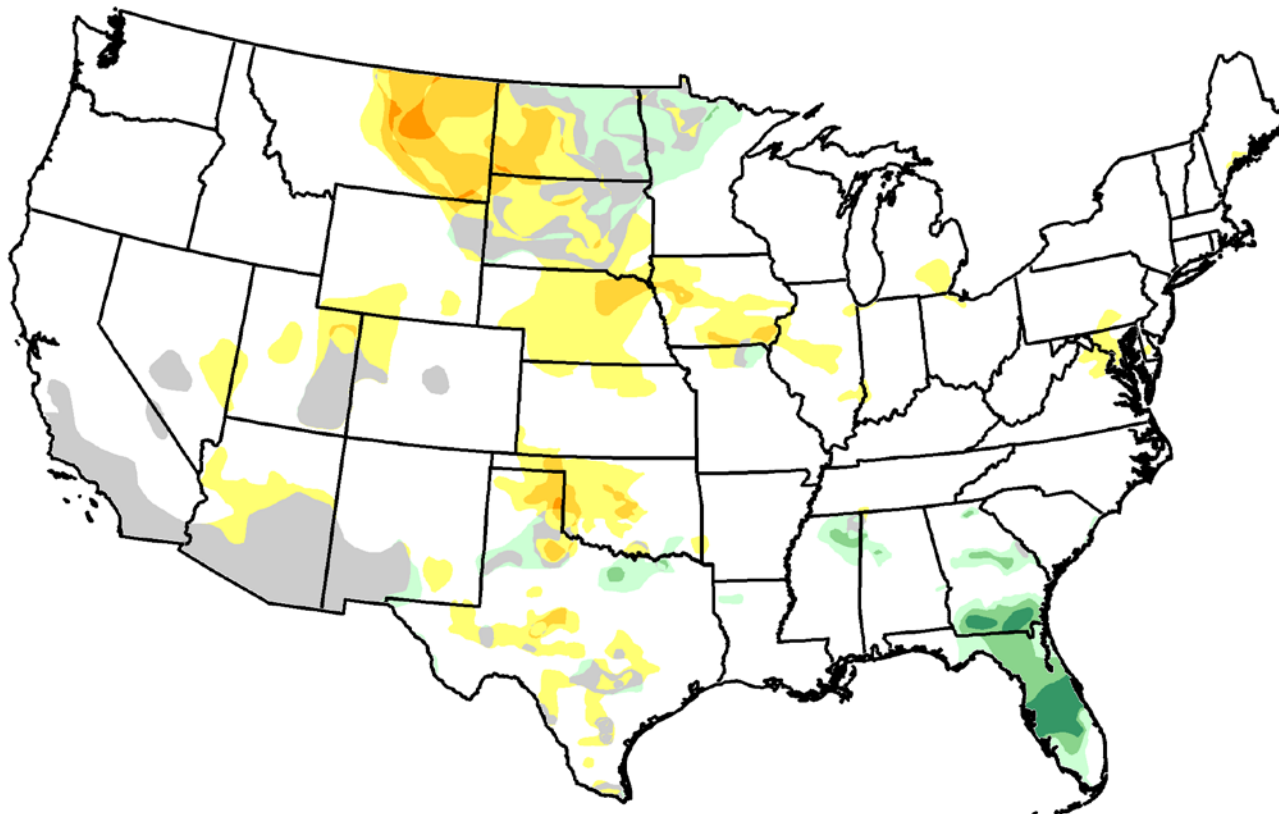
Dark Red D4 Exceptional Drought

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

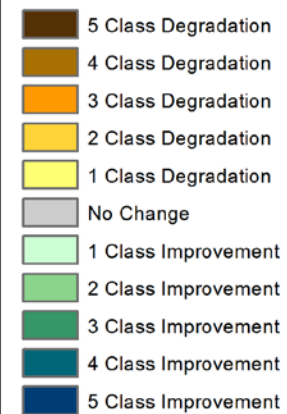


<http://droughtmonitor.unl.edu/>

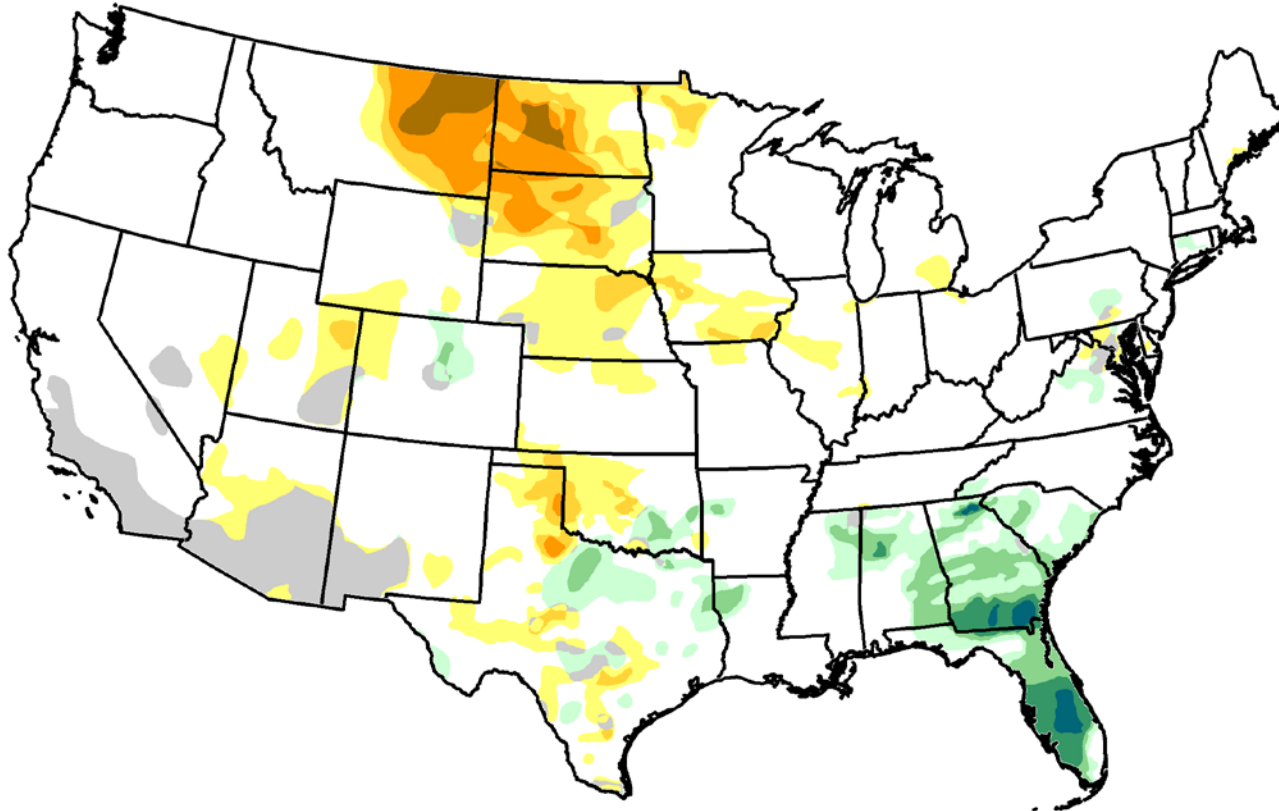
U.S. Drought Monitor Class Change - CONUS 1 Month



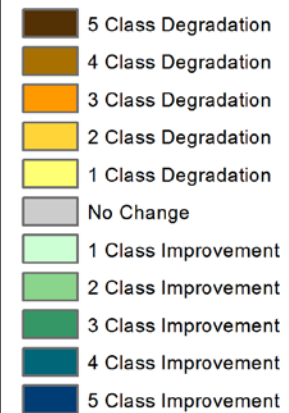
July 4, 2017
compared to
June 6, 2017



U.S. Drought Monitor Class Change - CONUS 2 Months



July 4, 2017
compared to
May 9, 2017



U.S. Drought Monitor Class Change - NWS Central Region Start of Calendar Year

July 4, 2017
compared to
January 3, 2017

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

<http://droughtmonitor.unl.edu>

U.S. Drought Monitor High Plains

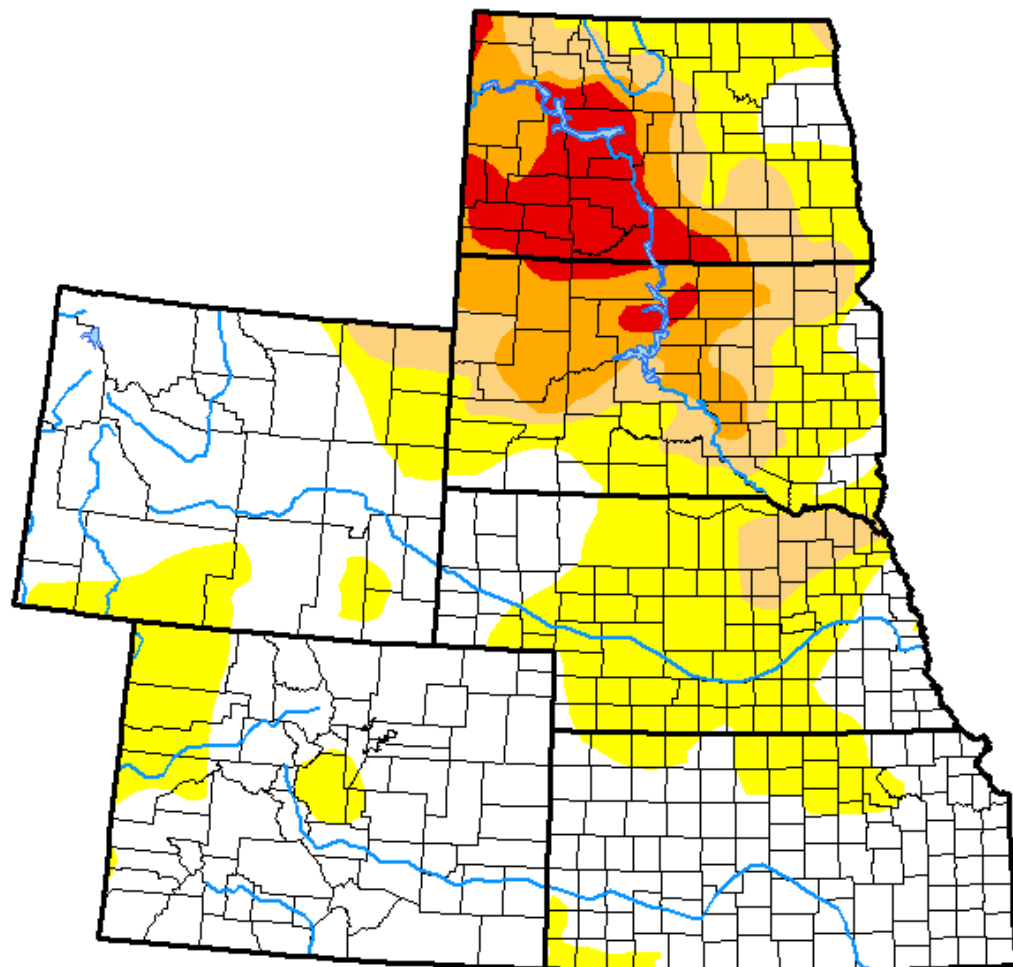
July 4, 2017

(Released Thursday, Jul. 6, 2017)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	53.49	46.51	19.90	11.69	4.72	0.00
Last Week 06-27-2017	56.10	43.90	18.27	11.26	3.79	0.00
3 Months Ago 04-04-2017	70.57	29.43	11.04	0.70	0.00	0.00
Start of Calendar Year 01-03-2017	50.65	49.35	21.54	3.85	0.00	0.00
Start of Water Year 09-27-2016	70.86	29.14	8.66	2.68	0.17	0.00
One Year Ago 07-05-2016	75.94	24.06	9.30	1.83	0.28	0.00



Intensity:



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

Author:

David Simeral
Western Regional Climate Center



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

U.S. Drought Monitor Weekly Comparison

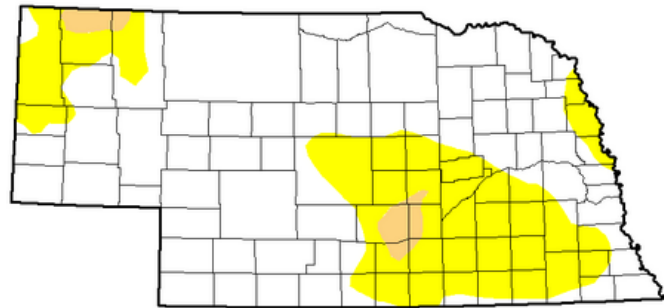
State

Nebraska

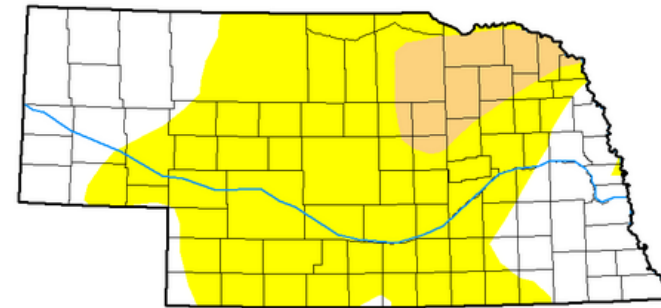
Statistics type:

Traditional Percent Area

Legend



July 5, 2016



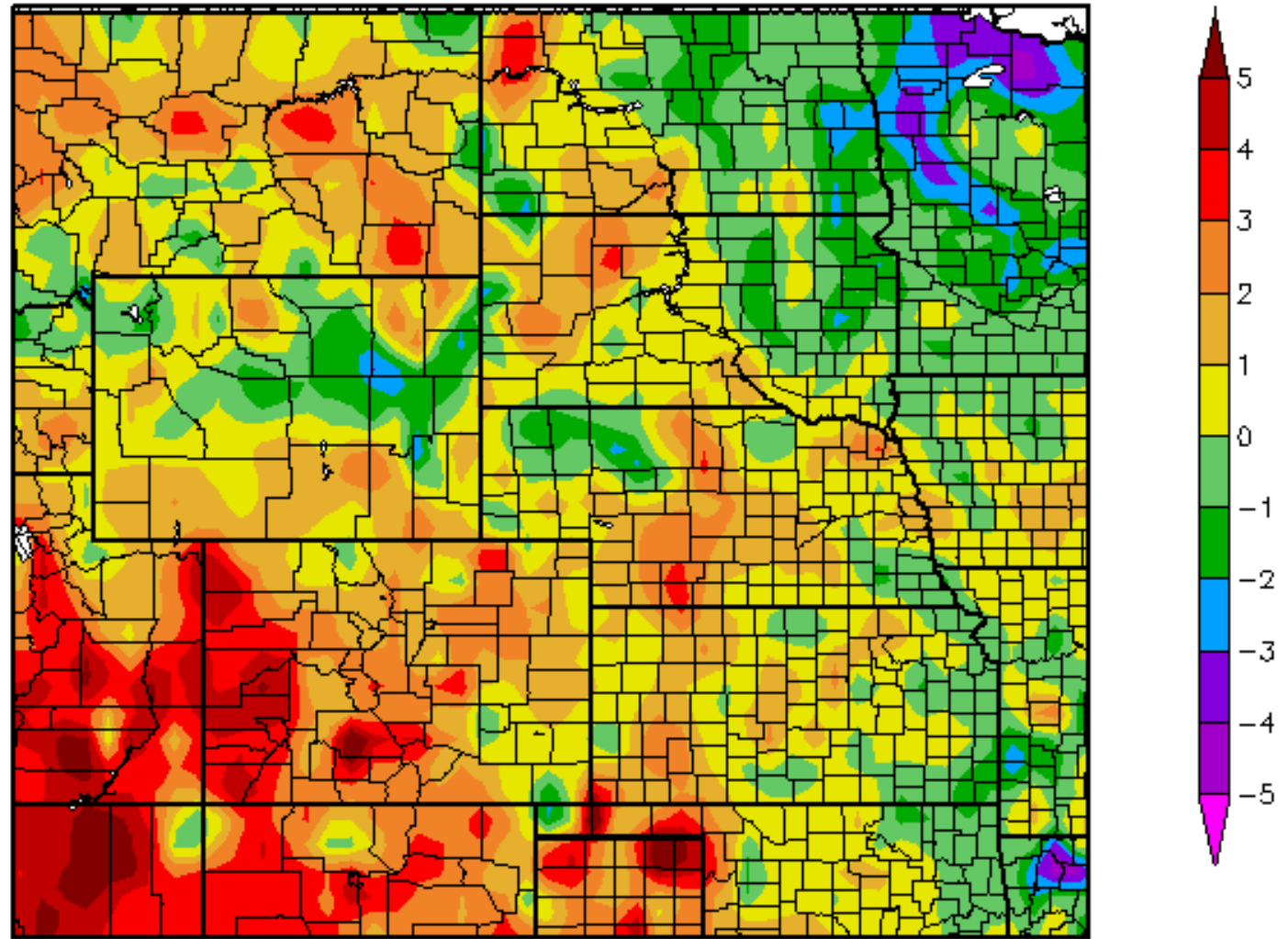
July 4, 2017

Statistics Comparison

Week	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
2016-07-05	70.18	29.82	2.22	0.00	0.00	0.00
2017-07-04	32.04	67.96	8.69	0.00	0.00	0.00

Departure from
Normal
Temperatures over
the last 30 days

Departure from Normal Temperature (F)
6/10/2017 – 7/9/2017

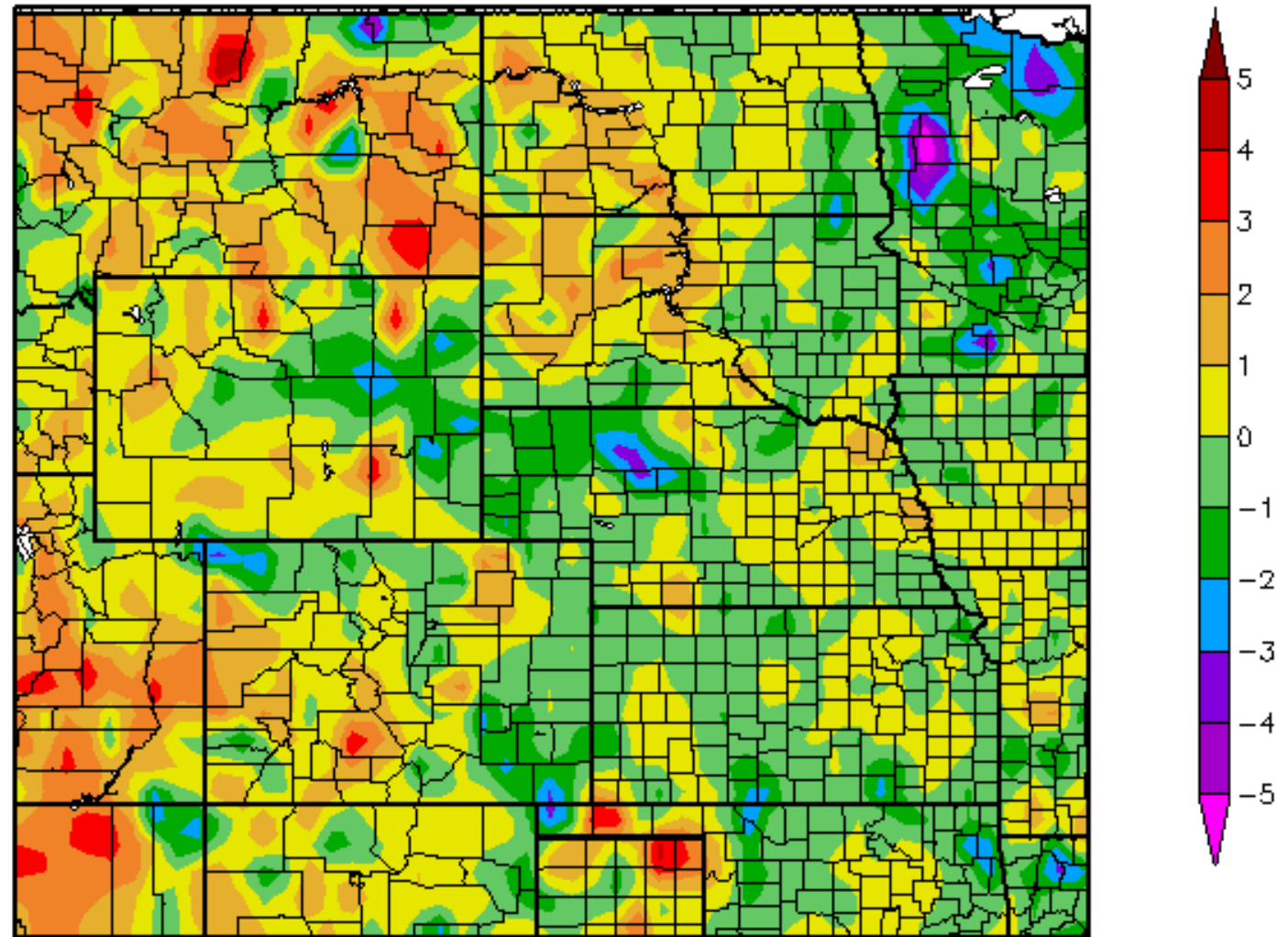


Generated 7/10/2017 at HPRCC using provisional data.

Regional Climate Centers

Departure from
Normal
Temperatures over
the last 60 days

Departure from Normal Temperature (F)
5/11/2017 – 7/9/2017

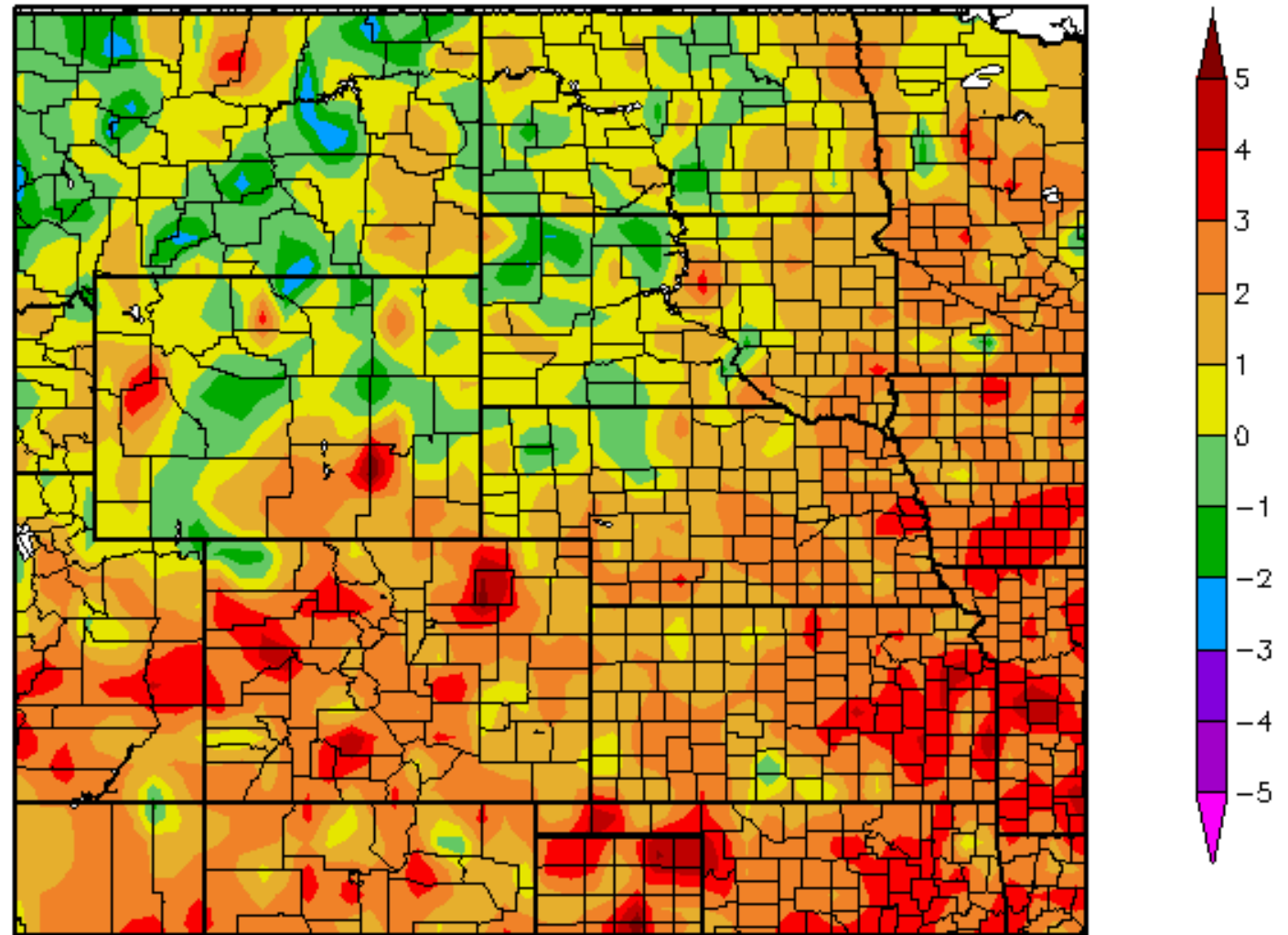


Generated 7/10/2017 at HPRCC using provisional data.

Regional Climate Centers

Departure from Normal Temperatures for the Calendar Year

Departure from Normal Temperature (F)
1/1/2017 – 7/8/2017

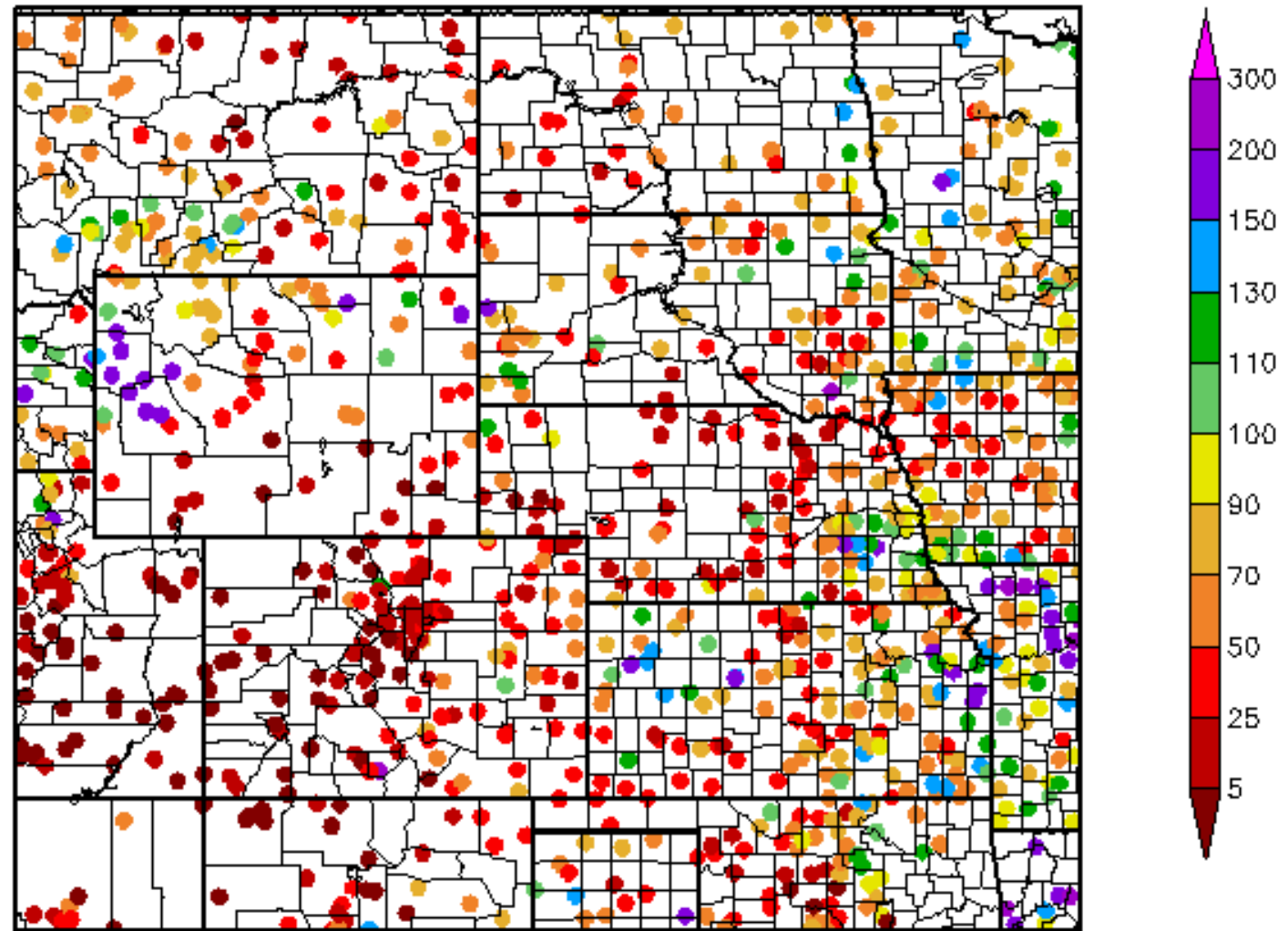


Generated 7/9/2017 at HPRCC using provisional data.

Regional Climate Centers

Percent of
Normal
Precipitation
over the last 30
days

Percent of Normal Precipitation (%)
6/10/2017 – 7/9/2017

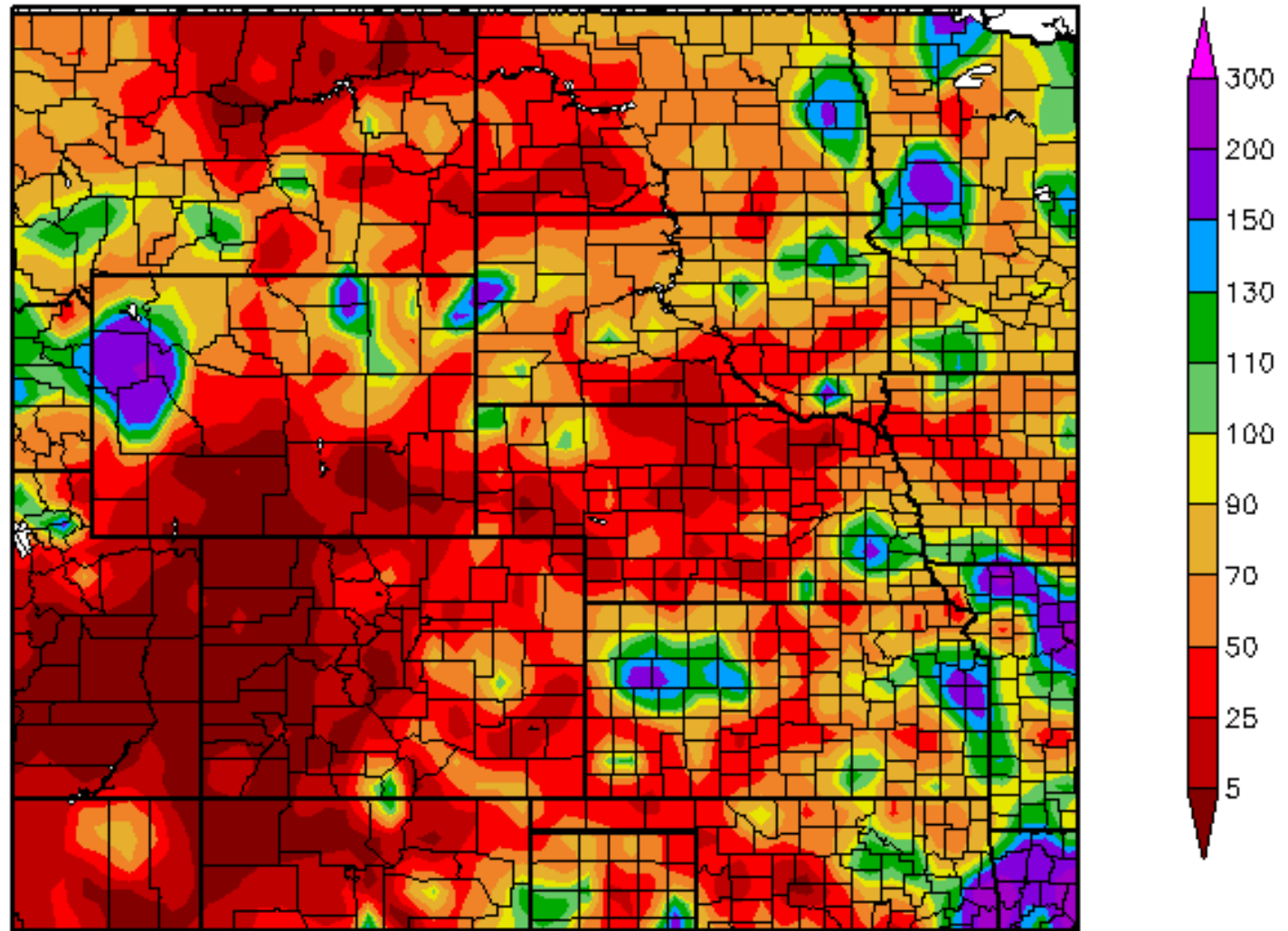


Generated 7/10/2017 at HPRCC using provisional data.

Regional Climate Centers

Percent of
Normal
Precipitation
over the last 30
days

Percent of Normal Precipitation (%)
6/10/2017 – 7/9/2017

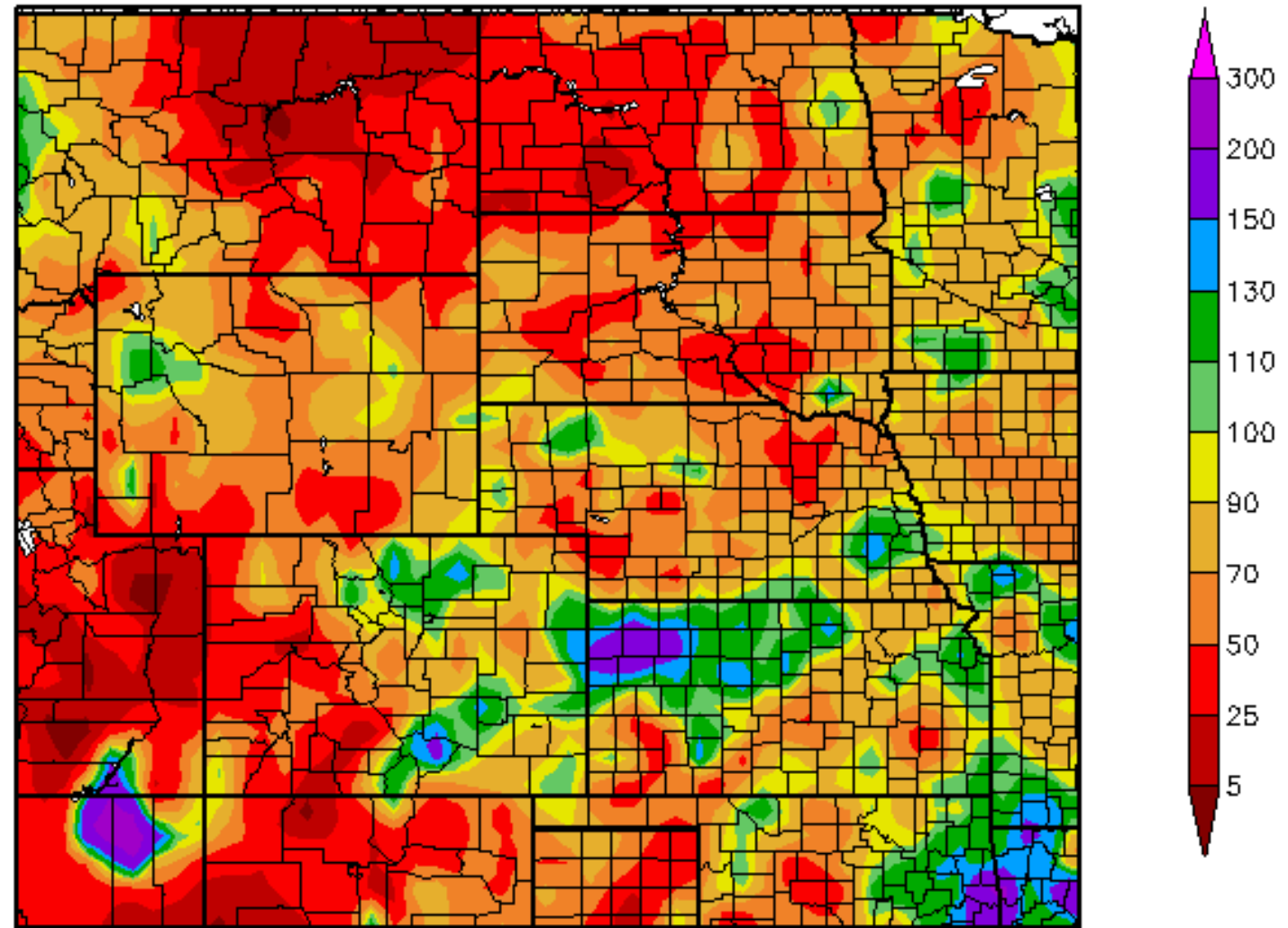


Generated 7/10/2017 at HPRCC using provisional data.

Regional Climate Centers

Percent of
Normal
Precipitation
over the last 60
days

Percent of Normal Precipitation (%)
5/11/2017 – 7/9/2017

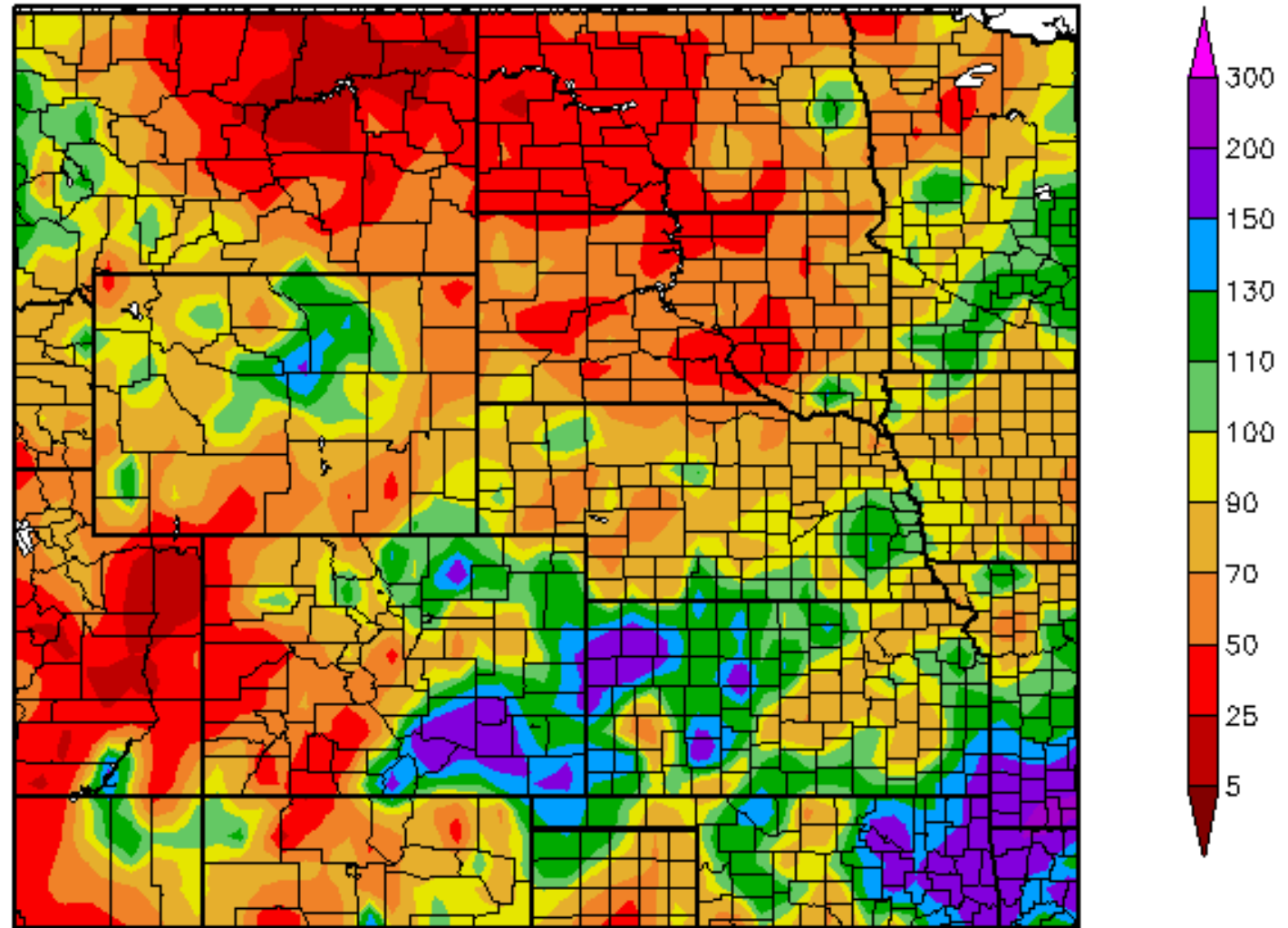


Generated 7/10/2017 at HPRCC using provisional data.

Regional Climate Centers

Percent of Normal Precipitation (%)
4/11/2017 – 7/9/2017

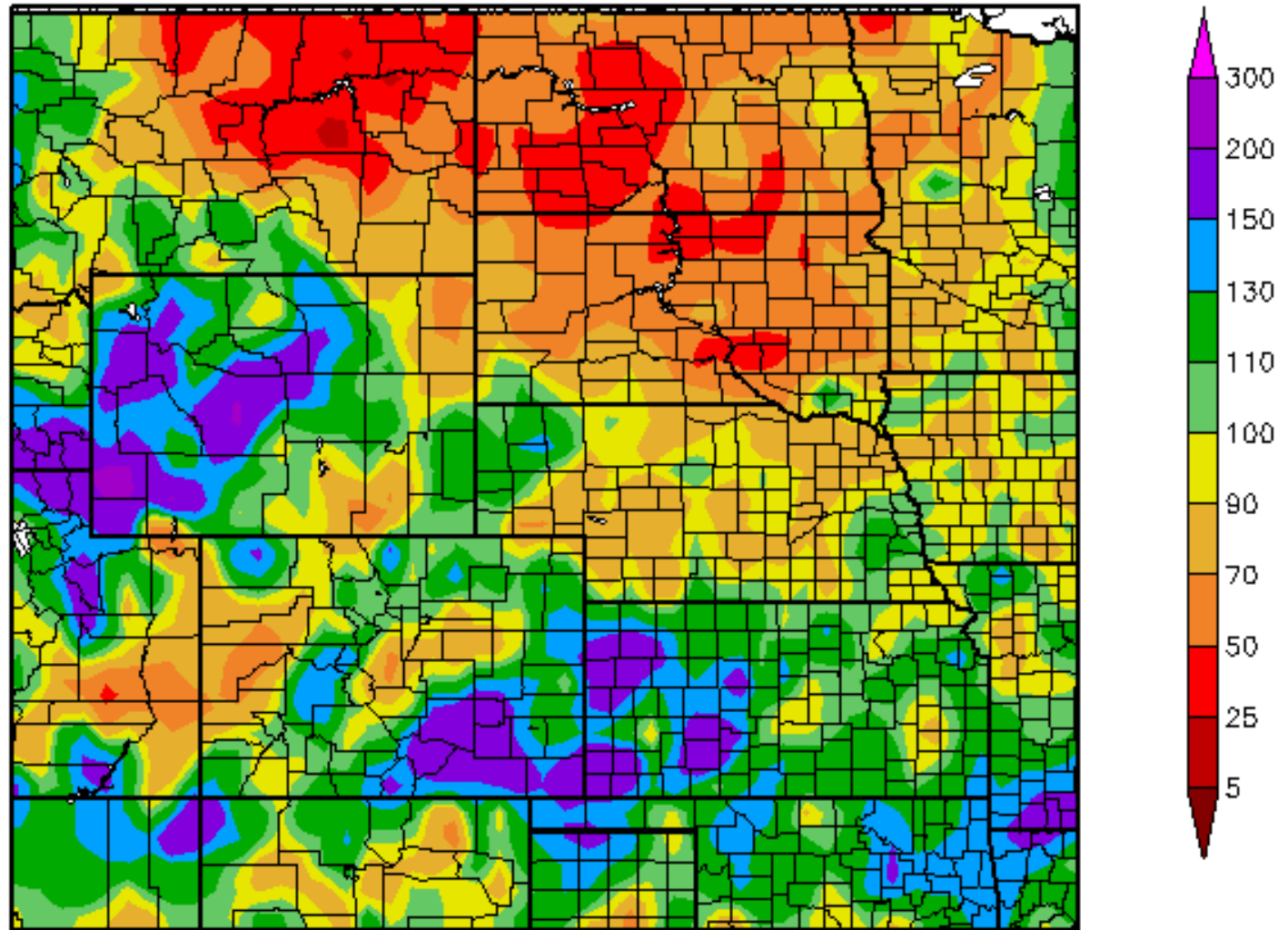
Percent of
Normal
Precipitation
over the last 90
days



Generated 7/10/2017 at HPRCC using provisional data.

Regional Climate Centers

Percent of Normal Precipitation (%)
1/1/2017 – 7/8/2017



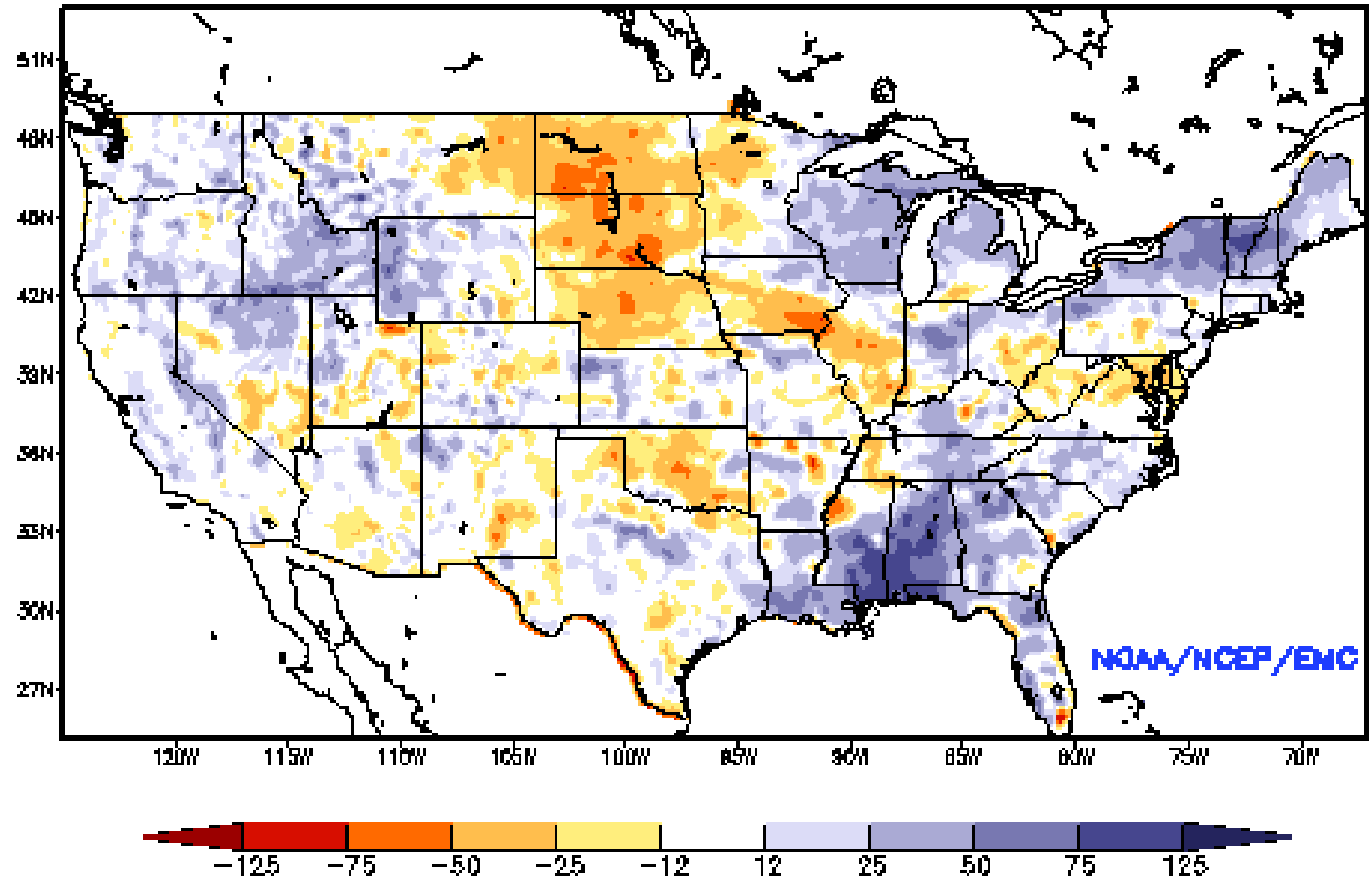
Percent of
Normal
Precipitation for
the calendar
year

Generated 7/9/2017 at HPRCC using provisional data.

Regional Climate Centers

NLDAS Soil Moisture Model: Current Soil Moisture Anomaly

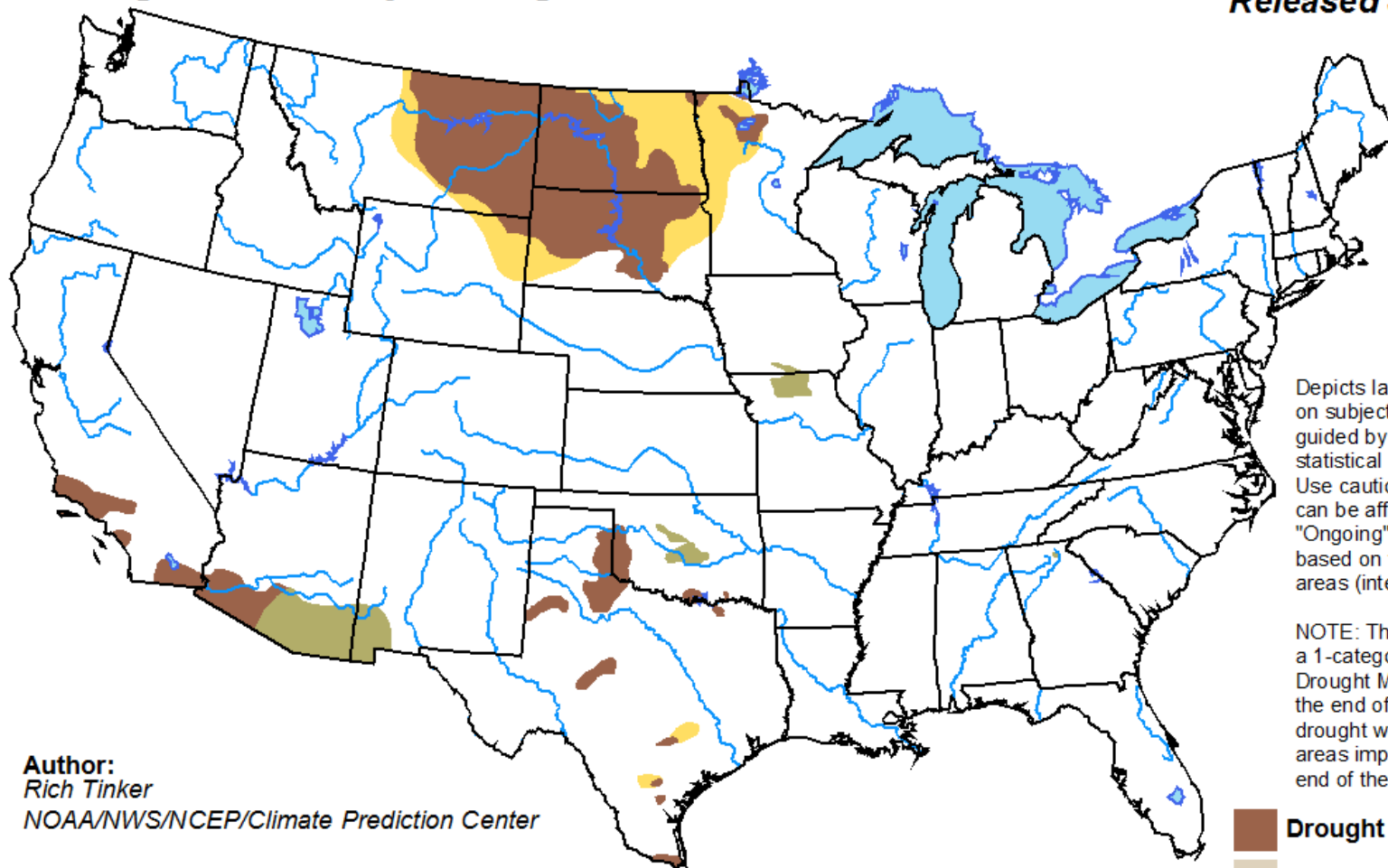
Ensemble-Mean - Current Top 1M Soil Moisture Anomaly (mm)
NCEP NLDAS Products Valid: JUL 02, 2017



U.S. Monthly Drought Outlook

Drought Tendency During the Valid Period





Valid for July 2017
Released June 30, 2017

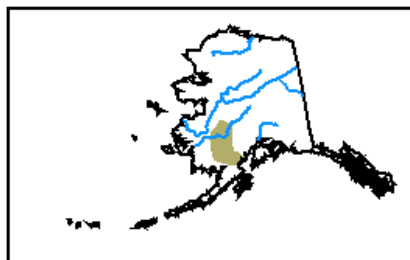


Author:
Rich Tinker
NOAA/NWS/NCEP/Climate Prediction Center

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

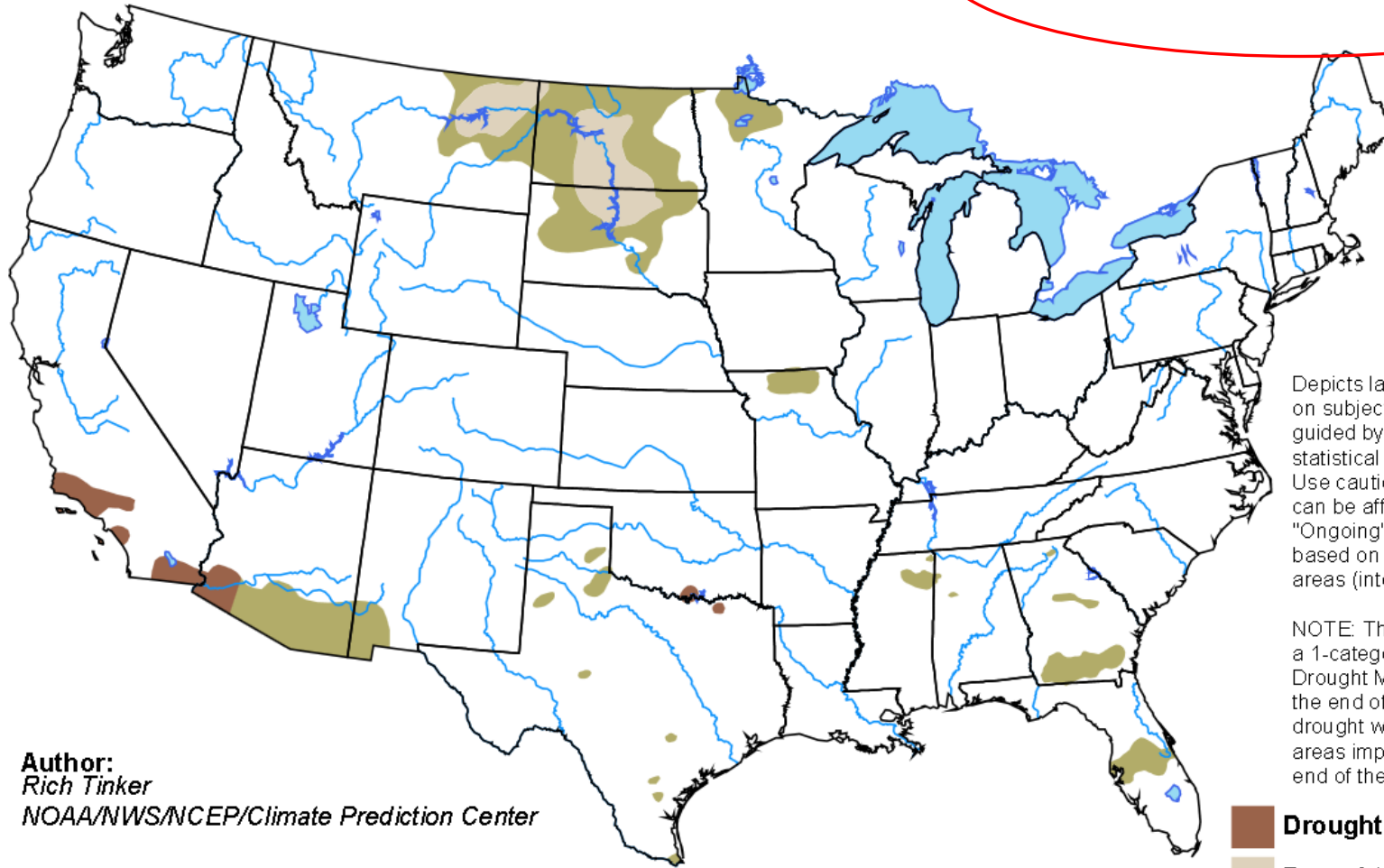


<http://go.usa.gov/3eZGd>

U.S. Seasonal Drought Outlook

Drought Tendency During the Valid Period





Valid for June 15 - September 30, 2017
Released June 15, 2017

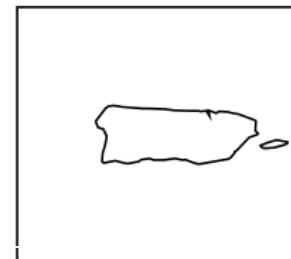
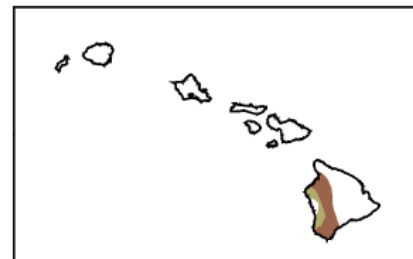
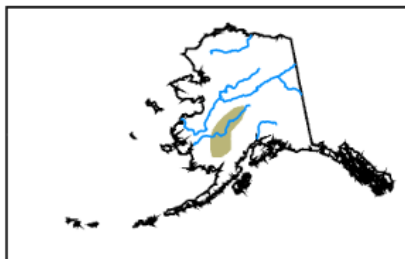


Author:
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NOAA/NWS/NCEP/Climate Prediction Center

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).

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



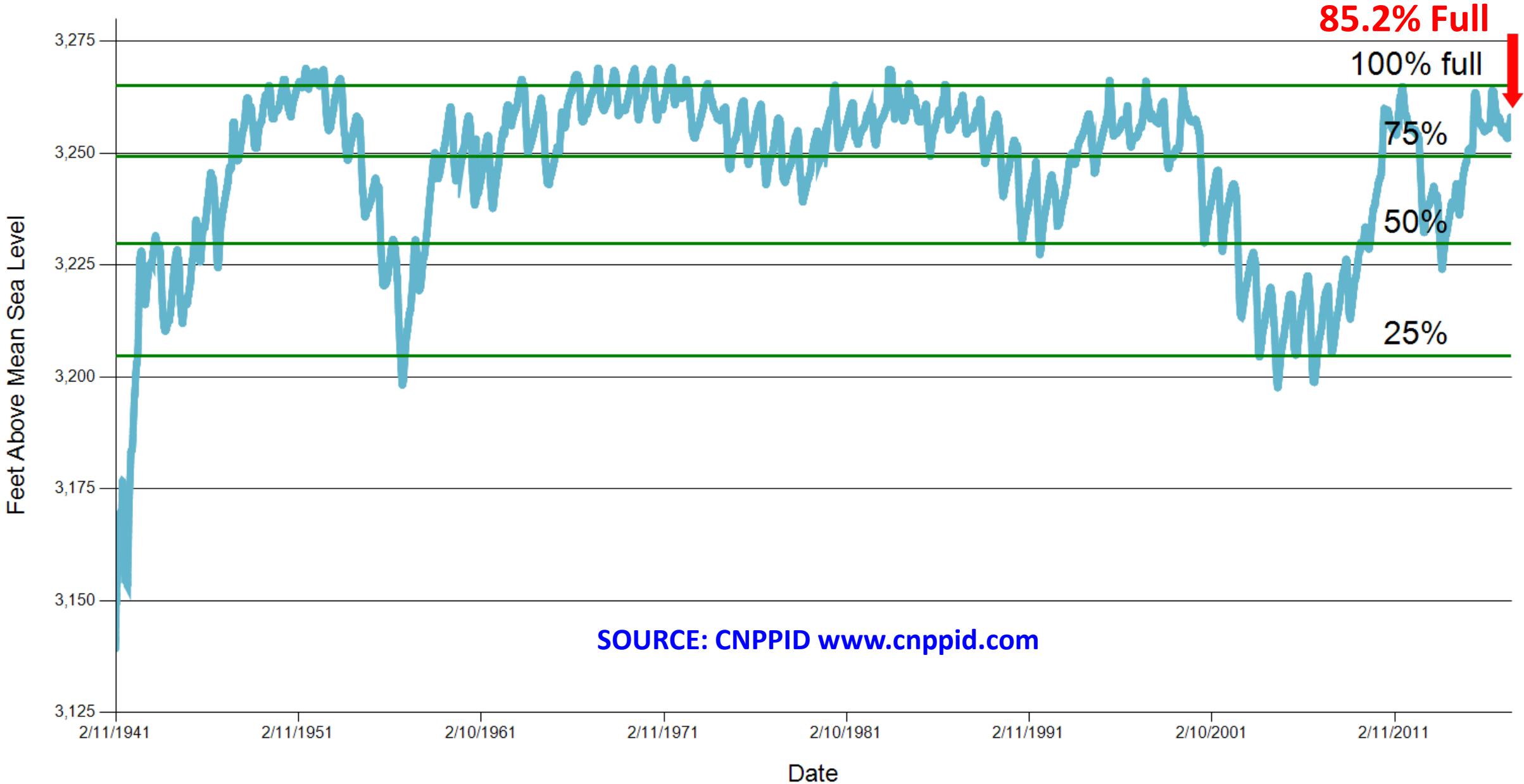
<http://go.usa.gov/3eZ73>

Climate/Drought Summary

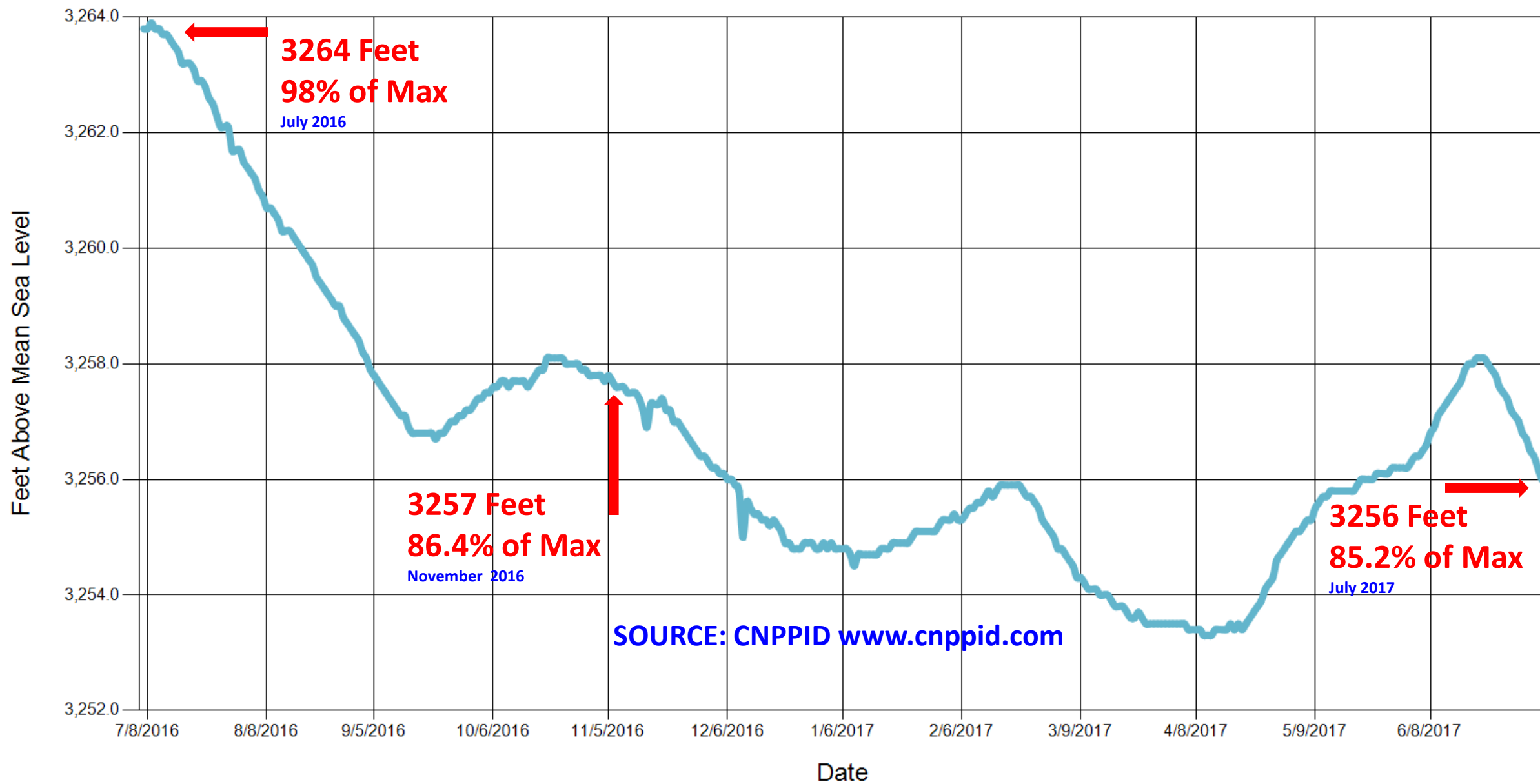
- Warmer than normal conditions and a mix of precipitation conditions have been the dominant feature on the High Plains with the northern Plains being quite dry in 2017 so far.
- The summer, up to this point, has not been overly hot.
- Drought has developed rapidly over the northern Plains over the last 1-2 months with areas now in Extreme Drought through almost 30 percent of North Dakota.
- Conditions for Nebraska are currently typical for this time of year with some dryness and drought developing over the last month and 8.69 percent of the state currently in drought, confined to northeast and north central Nebraska.
- The seasonal drought outlook does show the potential for improvements over the northern Plains by the end of September.

Nebraska Water Supply Update...

Lake McConaughy Elevation since 1941



Lake McConaughy Elevation (One Year)



July 2017 CARC Meeting



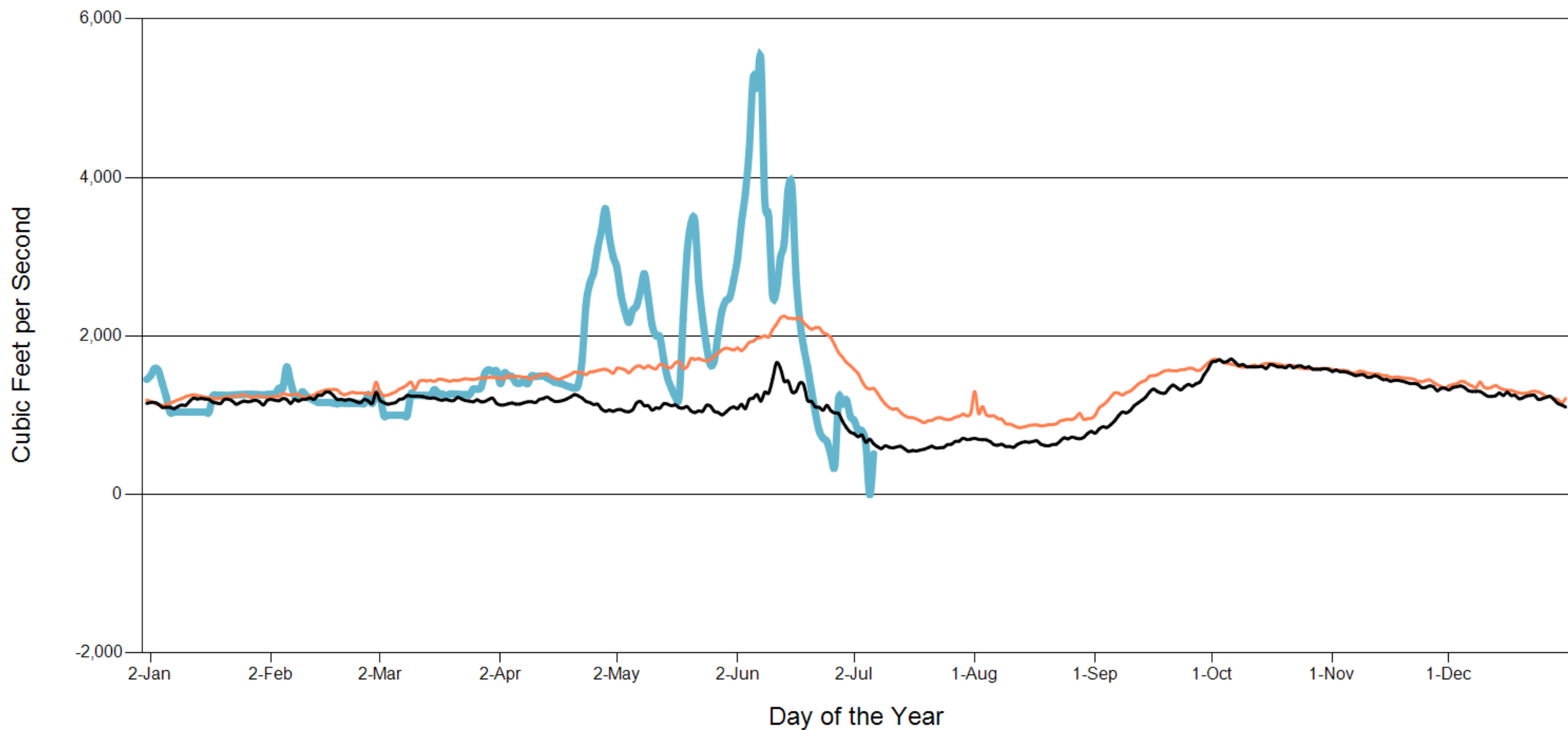
River & Canal Flows

Station	Today (Cubic Feet per Second)	1 Week Ago	1 Month Ago	1 Year Ago
Inflows to McConaughy	521	988	4,326	3,495
Total Outflows from McConaughy	N/A	3,163	1,737	2,744
North Platte at Keystone	1,314	1,342	292	1,127
Keystone Diversion	N/A	1,821	1,445	1,617
North Platte at North Platte	929	981	457	1,027
South Platte at Roscoe	7,7.7	143	1,910	252
South Platte at North Platte	223	249	1,989	589
Supply Canal Diversion	2,208	2,261	2,225	2,199
Platte at Overton	873	506	3,468	1,998
Platte at Kearney	843	390	3,510	2,190
Platte at Grand Island	375	486	3,920	2,150

Flows and elevations are provisional. Readings from measuring equipment may be affected during icing conditions.

SOURCE: CNPPID www.cnppid.com

Lake McConaughy Inflows



— This Year's Inflows — Historic Average (1941-Present) — Historic Median (1941-Present)

Lake McConaughy

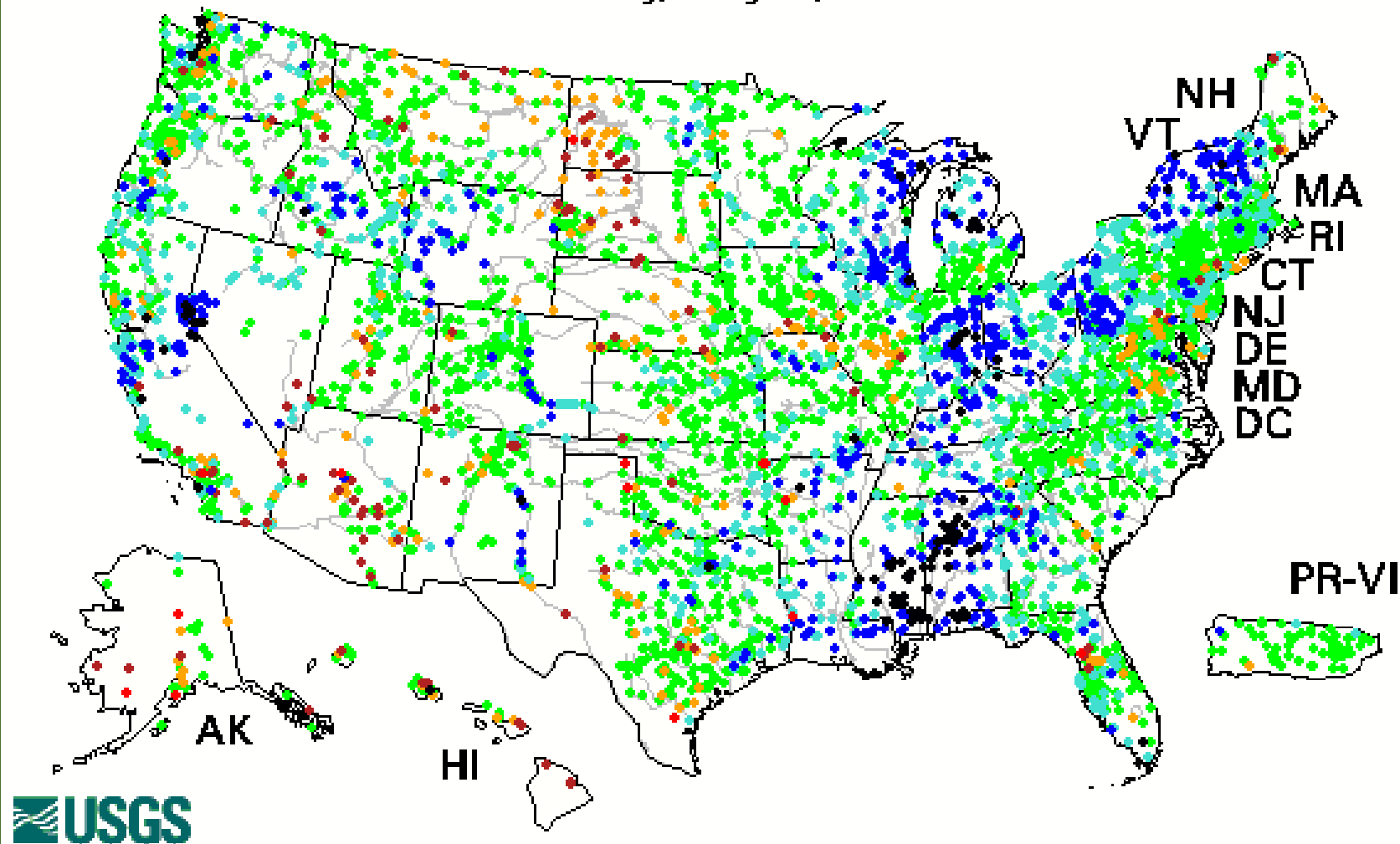
Civil engineer Cory Steinke reported that Lake McConaughy's elevation, currently at elevation 3,256.4 (85 percent of capacity), is dropping about two inches per day in response to increasing irrigation demands. Inflows have been around 600 cubic feet per second (cfs) while releases have been about 3,100 cfs.

SOURCE: CNPPID News Release, July 5, 2017

www.cnppid.com

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

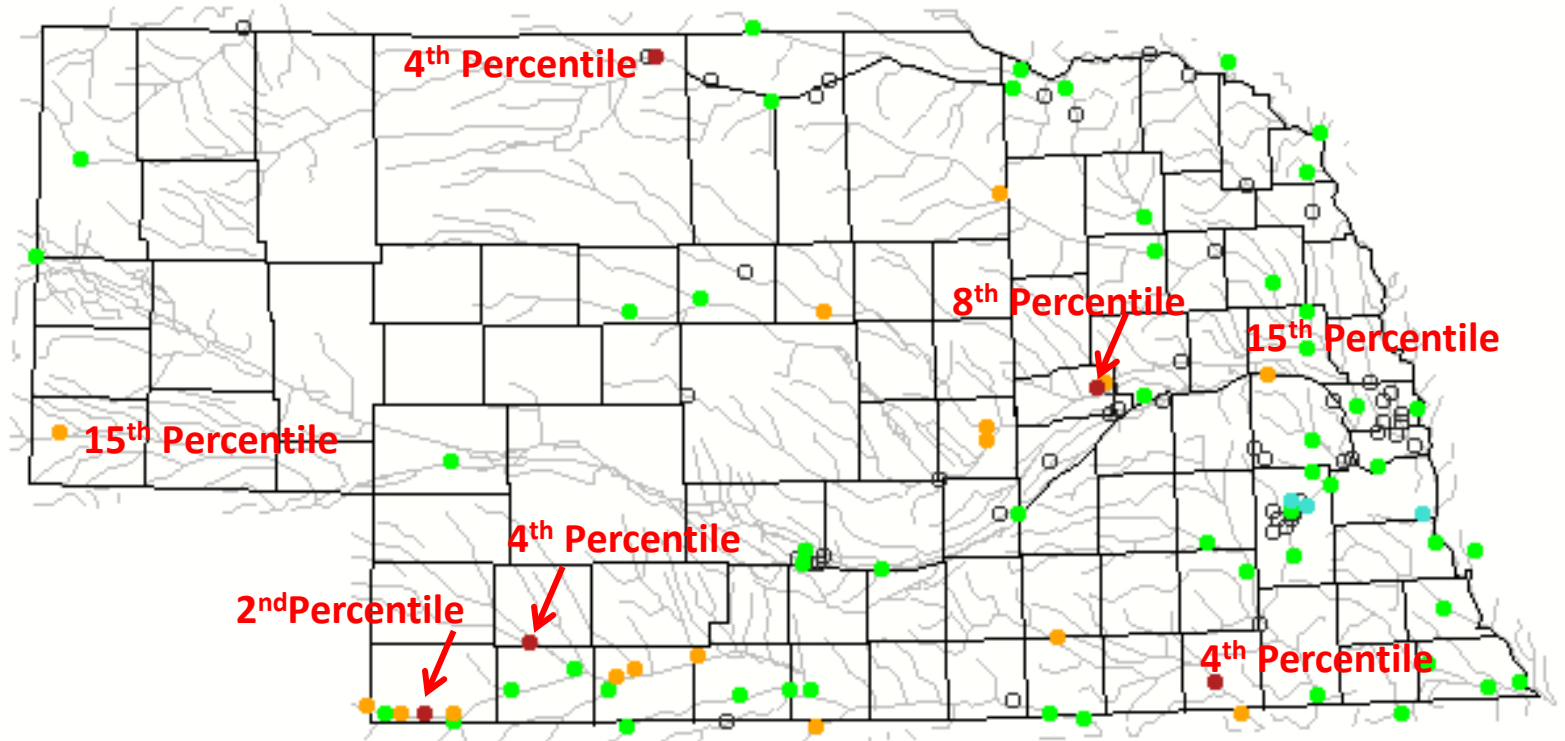
Thursday, July 06, 2017



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		

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

Thursday, July 06, 2017



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

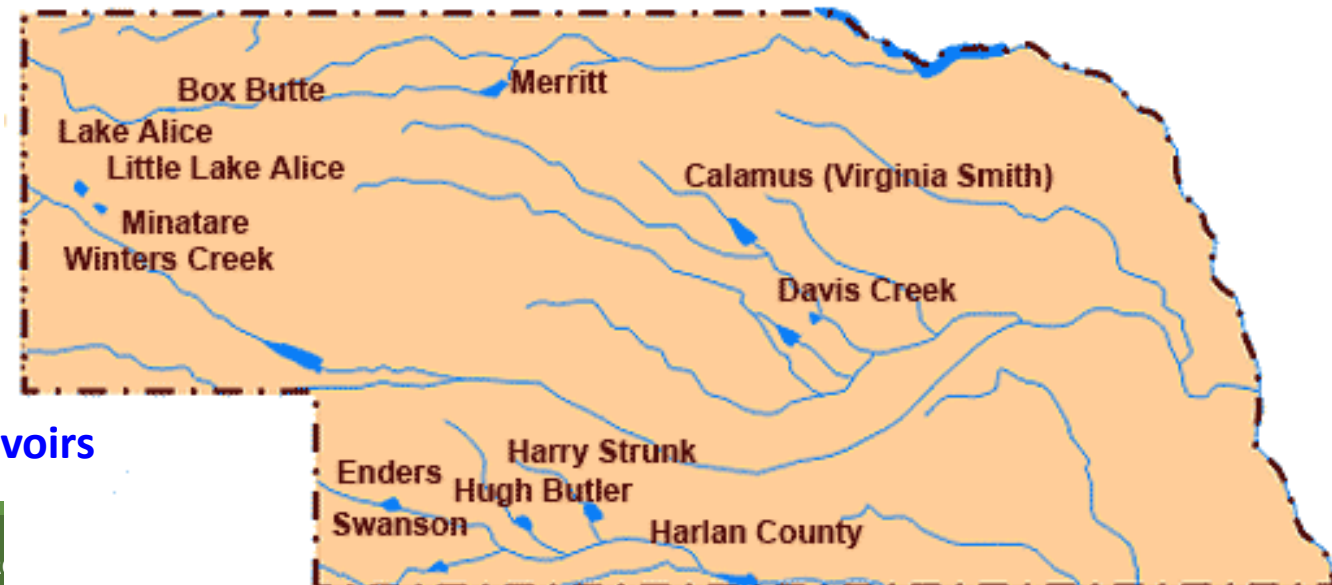
Hugh Butler: 44.9%(39.5%) of conservation pool

Enders: 21.4% (23.5%) of conservation pool

Harry Strunk: 76.7%(69.3%) of conservation pool

Swanson: 57.6% (39.7%) of conservation pool

*values in red are from the last
CARC meeting in November 2016.



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 November 2016.

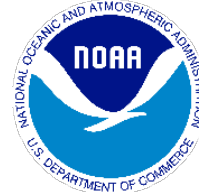
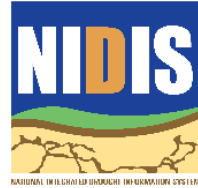
- ✓ Conservation Pool is 81.6% full (**60.9%**)
- ✓ 256,247 Acre-Feet in storage compared to **191,433** Acre-Feet (AF) of water in storage during November 2016
- ✓ Last year at this time, 235,510 AF was in storage (July 2016)
- ✓ Historical average storage for this time of the year is 253,575 AF

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

Water Supply Summary

- Lake McConaughy is currently 85.2 percent of capacity which is about what it was in November 2016 (last CARC meeting) with seasonal demands due to irrigation increasing.
- The Republican River basin reservoirs are at typical levels for this time of year as water is moved through them to meet irrigation demands.
- Harlan County Reservoir is holding about 65,000 acre-feet more water now than in November 2016.
- Harlan County is holding about 20,000 acre-feet more water now than last year at this time and is about average for this time of year.
- There should be plenty of water moving through these systems to meet irrigation demand for the 2017 growing season.

OUR PARTNERS



Any Questions ?



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