

NE Drought Conditions CARC Update: November 19, 2018

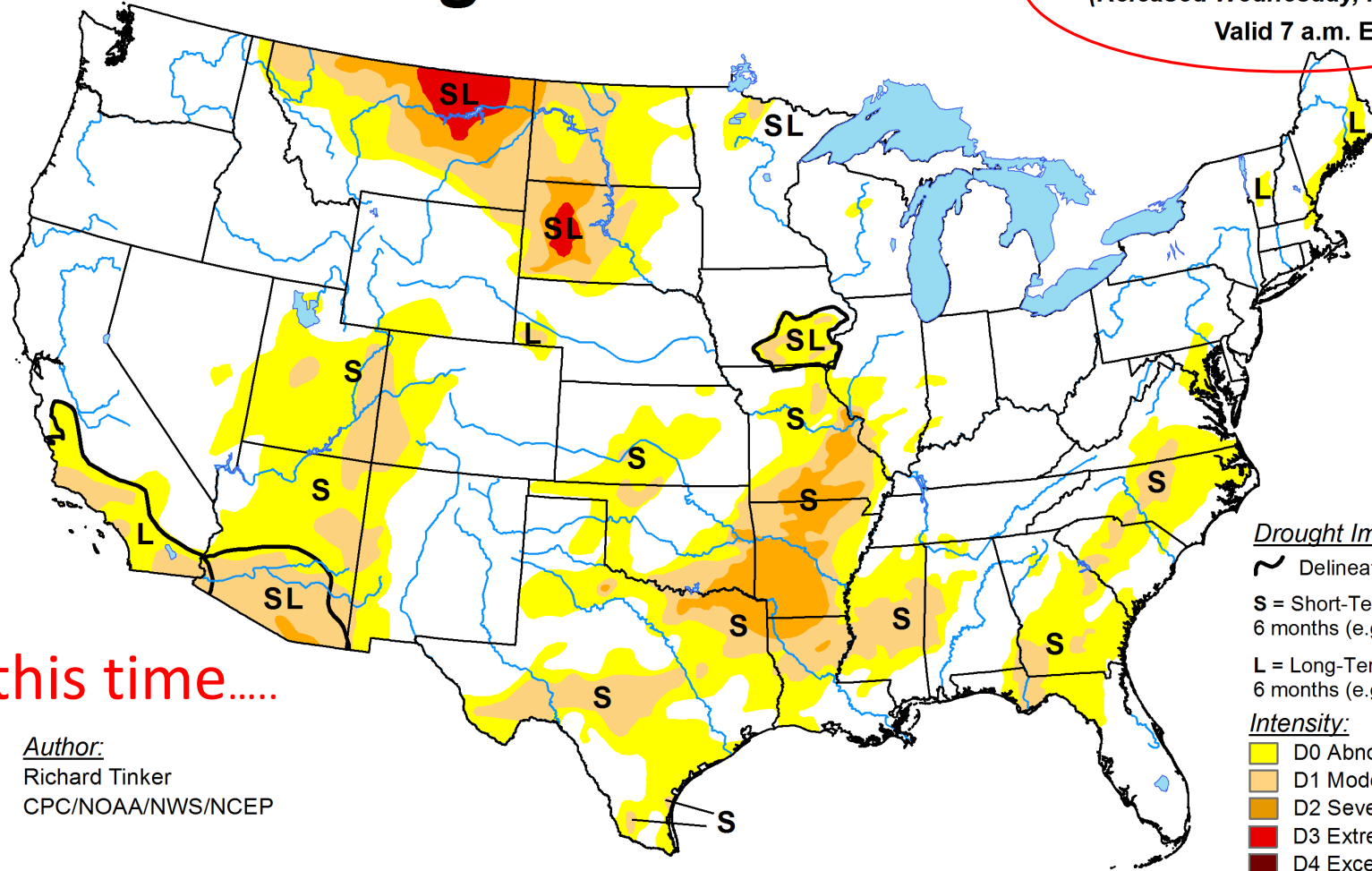
**Brian Fuchs
National Drought Mitigation Center
University of Nebraska-Lincoln
School of Natural Resources**



Regional Climatic and Drought Conditions...

U.S. Drought Monitor

November 21, 2017
(Released Wednesday, Nov. 22, 2017)
Valid 7 a.m. EST



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

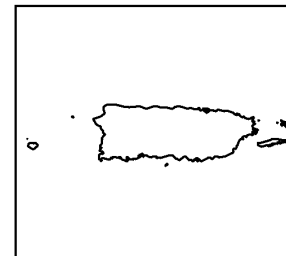
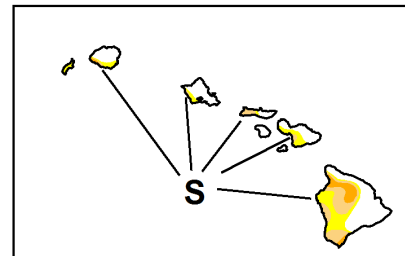
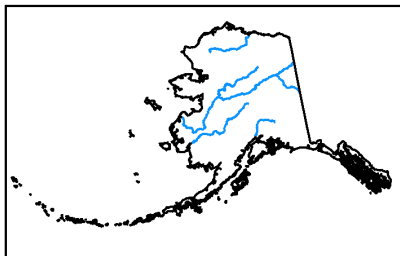
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.



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

Last year at this time.....

Author:
Richard Tinker
CPC/NOAA/NWS/NCEP

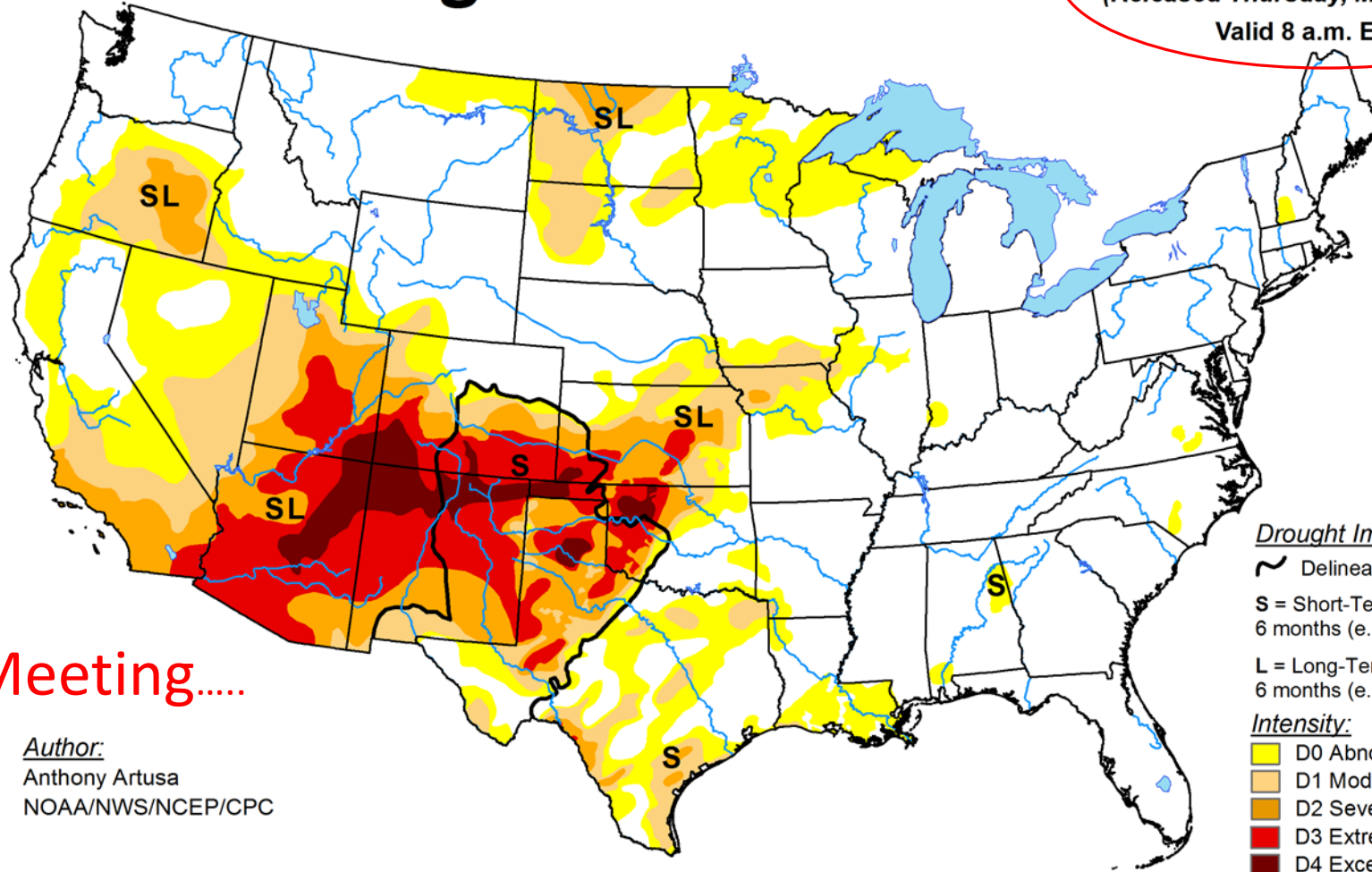


U.S. Drought Monitor

May 29, 2018

(Released Thursday, May. 31, 2018)

Valid 8 a.m. EDT



Drought Impact Types:

~ Delineates dominant impacts

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

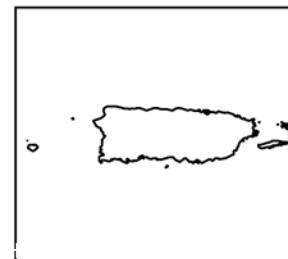
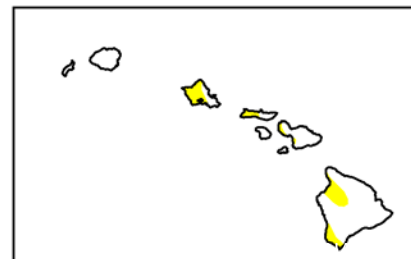
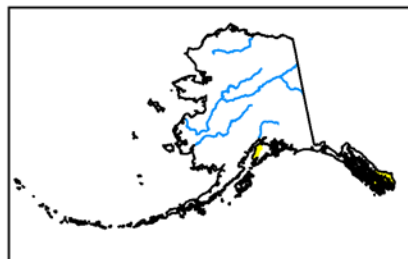
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Author:
Anthony Artusa
NOAA/NWS/NCEP/CPC



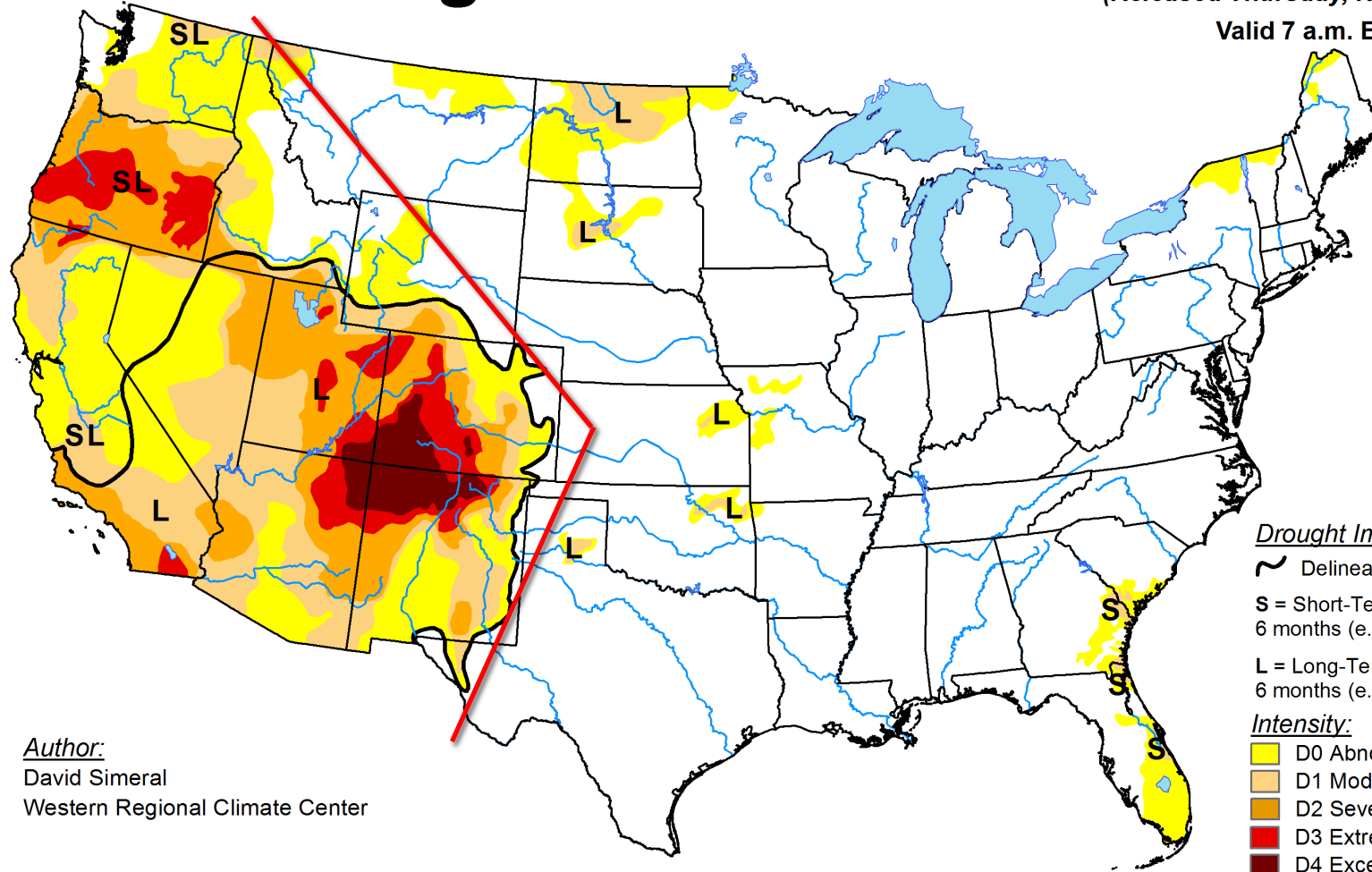
<http://droughtmonitor.unl.edu/>

Last CARC Meeting.....

U.S. Drought Monitor

November 13, 2018
(Released Thursday, Nov. 15, 2018)

Valid 7 a.m. EST



Author:
David Simeral
Western Regional Climate Center

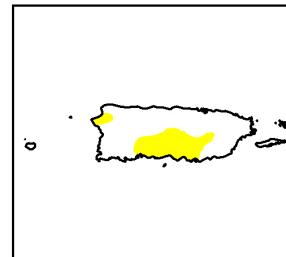
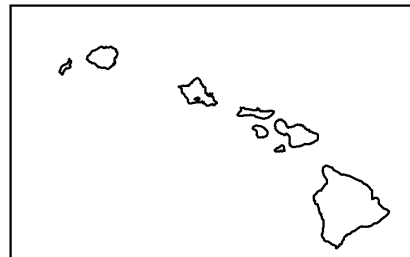
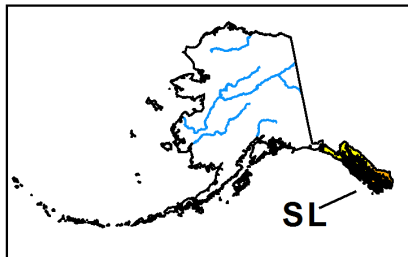
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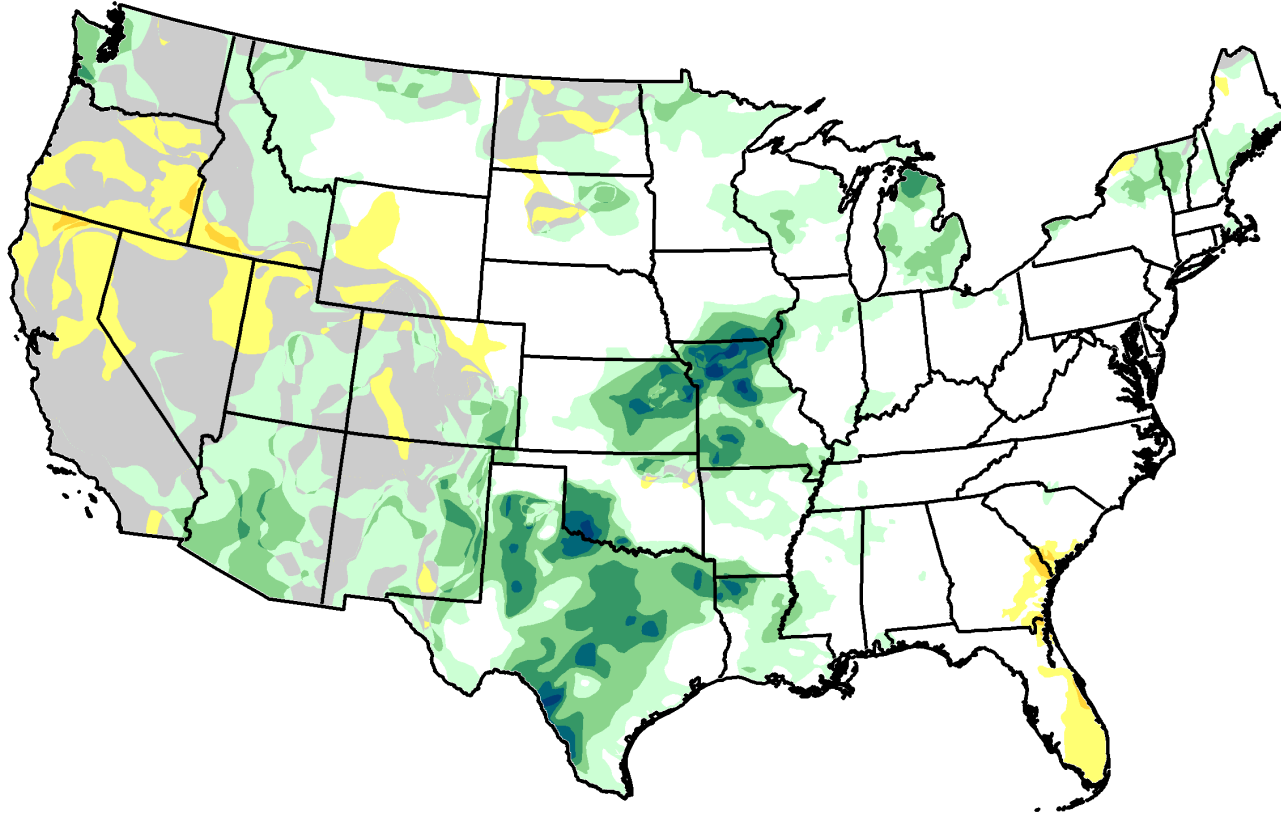
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<http://droughtmonitor.unl.edu/>

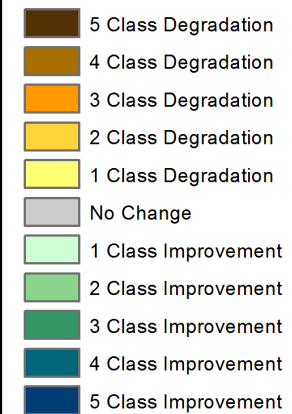
U.S. Drought Monitor Class Change - CONUS

3 Months



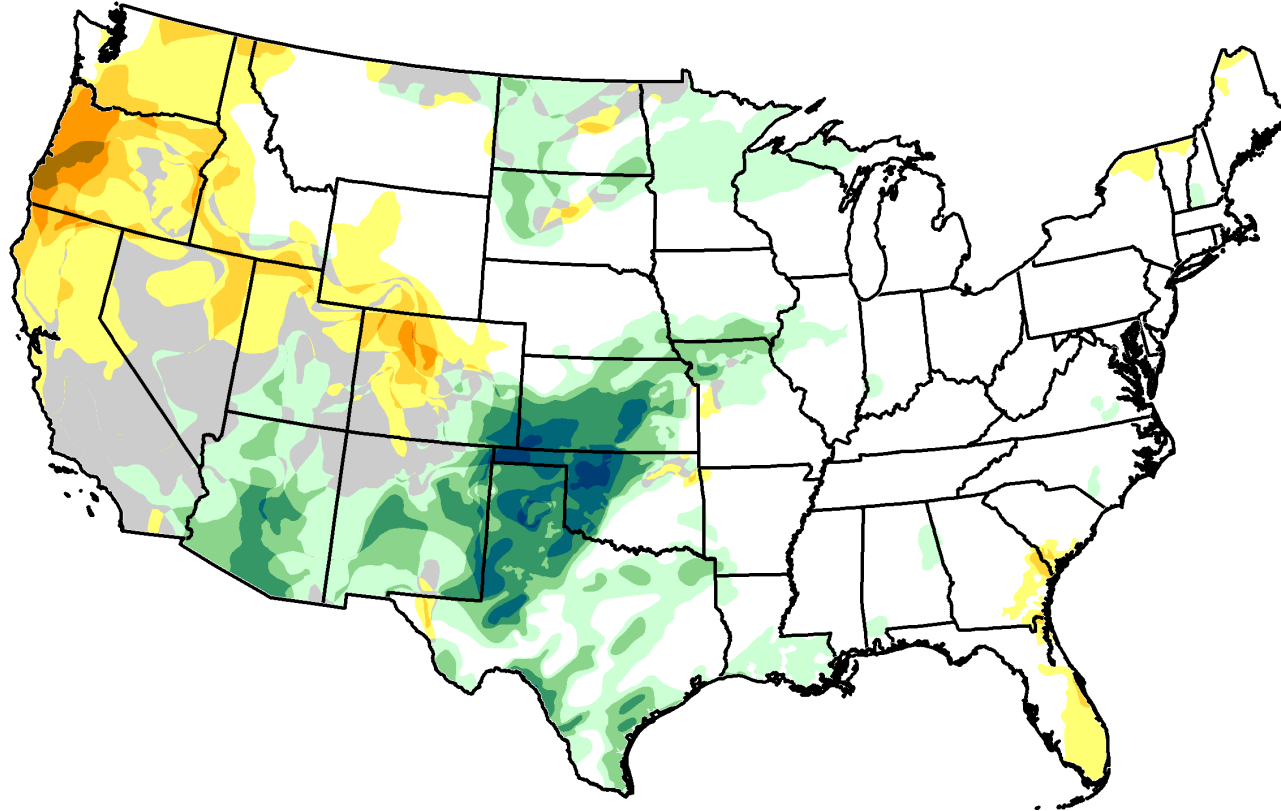
November 13, 2018
compared to
August 21, 2018

<http://droughtmonitor.unl.edu>

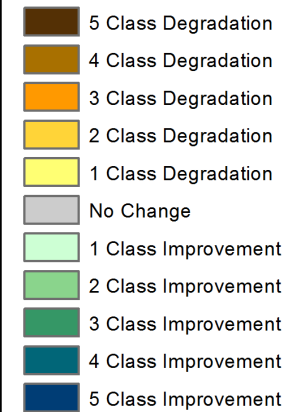


U.S. Drought Monitor Class Change - CONUS

6 Months



November 13, 2018
compared to
May 29, 2018



<http://droughtmonitor.unl.edu>

U.S. Drought Monitor

High Plains

November 13, 2018

(Released Thursday, Nov. 15, 2018)

Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	63.39	36.61	20.49	11.84	6.98	2.73
Last Week 11-06-2018	62.71	37.29	20.69	12.82	7.19	2.73
3 Months Ago 08-14-2018	54.90	45.10	28.27	18.65	11.12	2.15
Start of Calendar Year 01-02-2018	19.28	80.72	29.19	6.34	0.90	0.00
Start of Water Year 09-25-2018	52.20	47.80	28.48	18.28	11.05	3.38
One Year Ago 11-14-2017	64.94	35.06	13.64	3.26	0.90	0.00

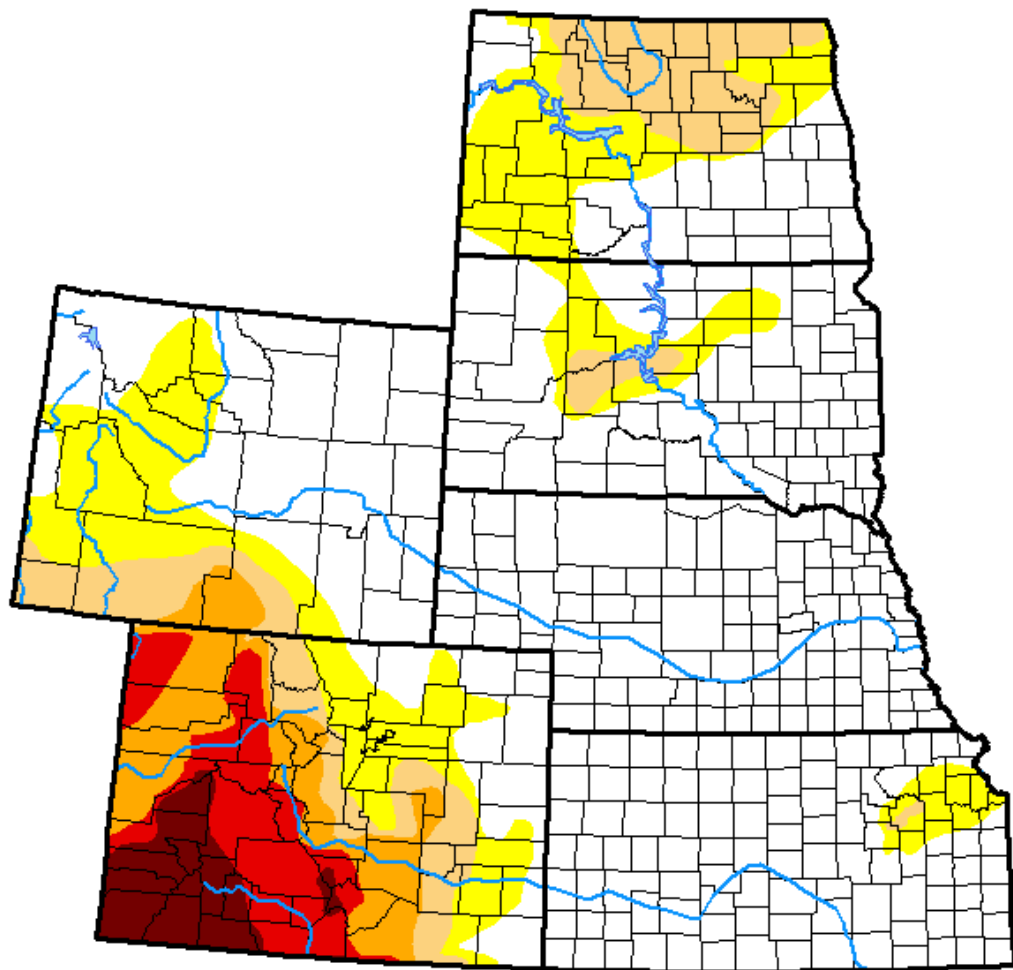
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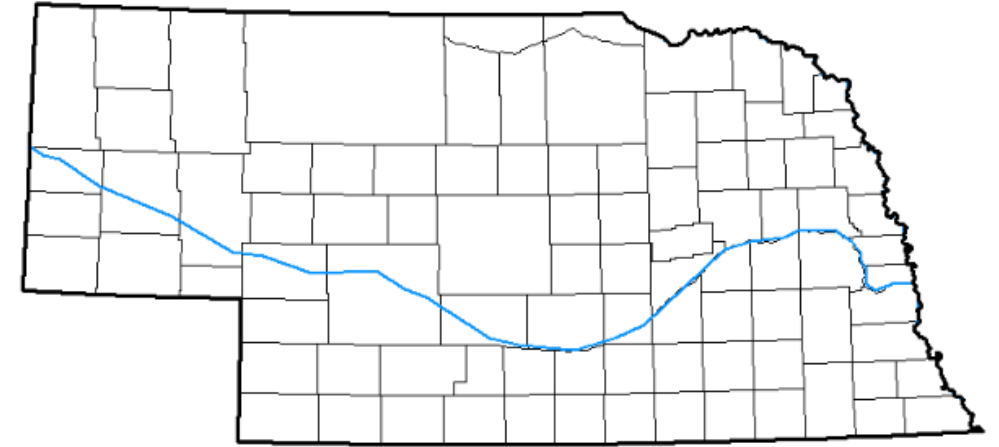
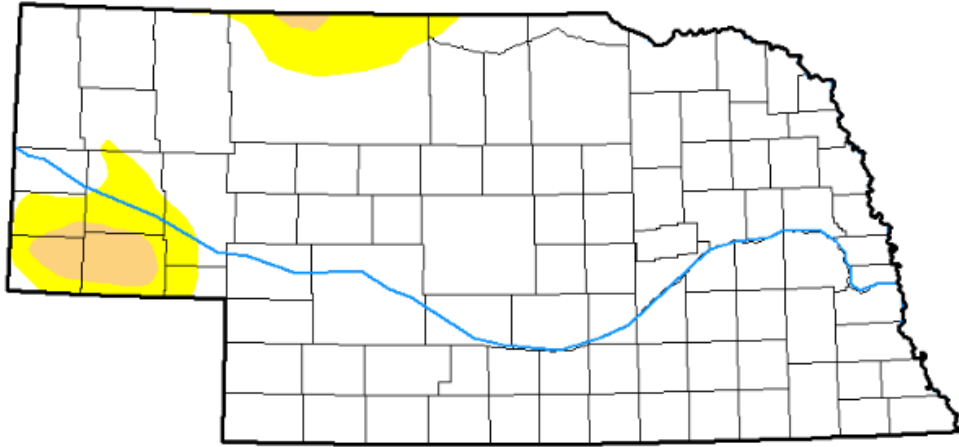
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:

David Simeral
Western Regional Climate Center



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



◀◀ November 21, 2017 ▶▶

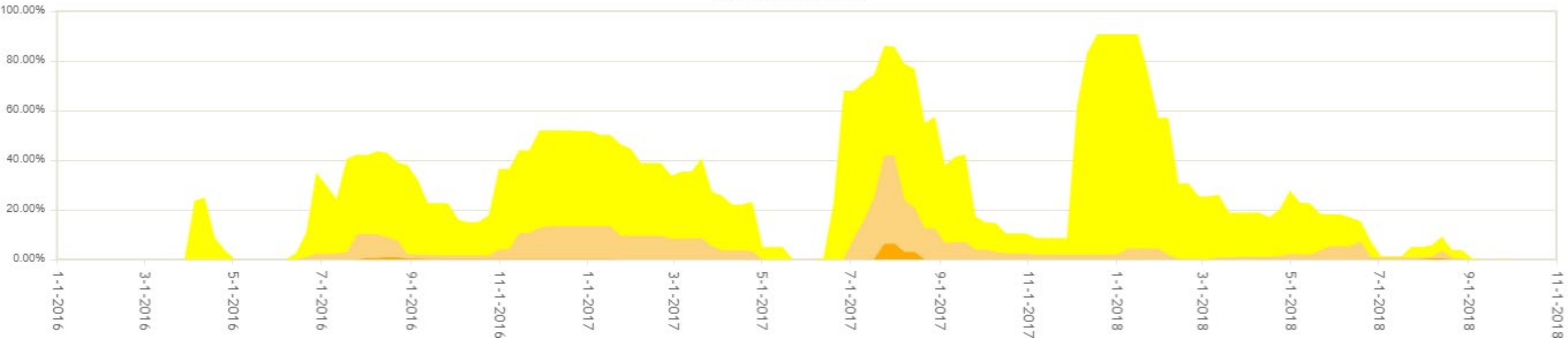


◀◀ November 13, 2018 ▶▶

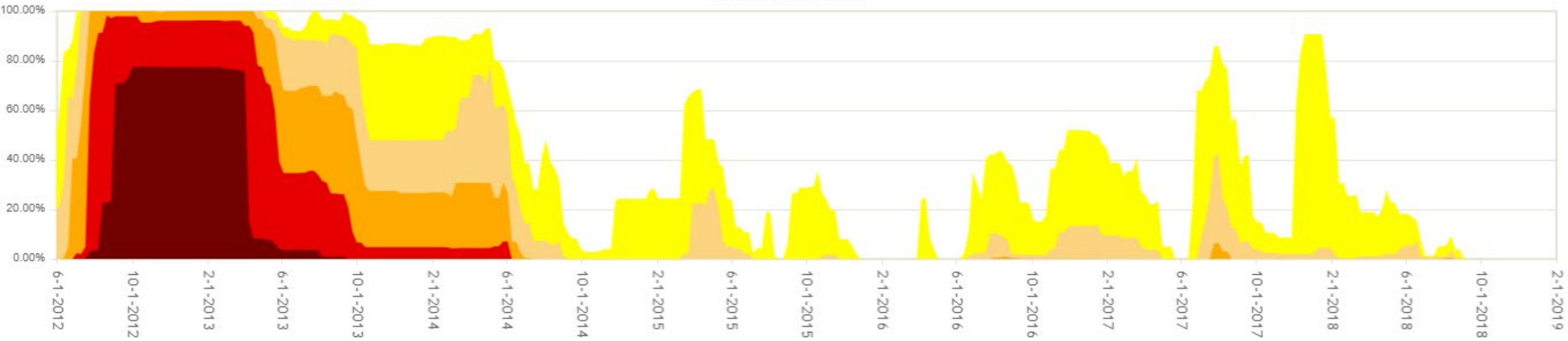
Statistics Comparison

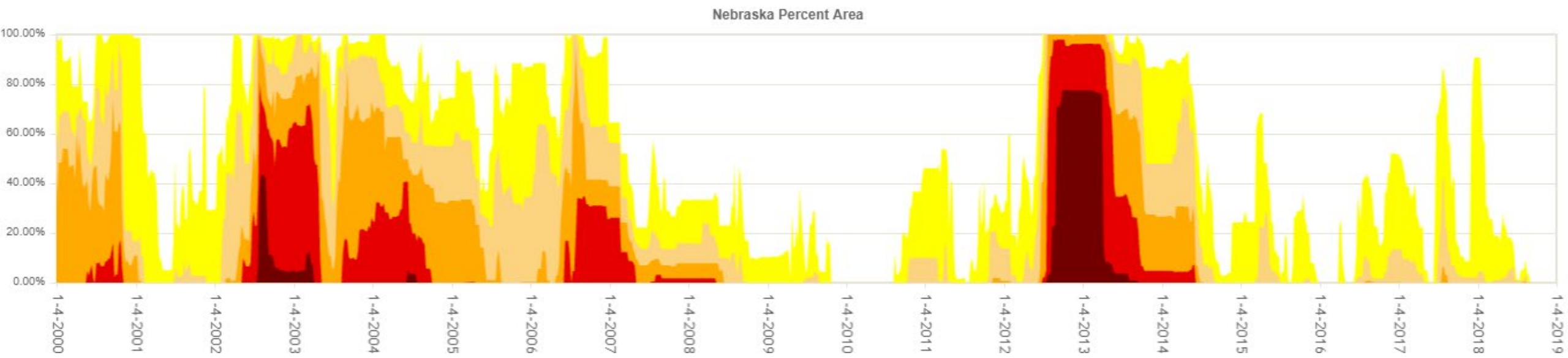
Week	None	D0-D4	D1-D4	D2-D4	D3-D4	D4	<u>DSCI</u>
2017-11-21	91.35	8.65	2.03	0.00	0.00	0.00	11
2018-11-13	100.00	0.00	0.00	0.00	0.00	0.00	0
Change	8.65	-8.65	-2.03	0.00	0.00	0.00	-11

Nebraska Percent Area



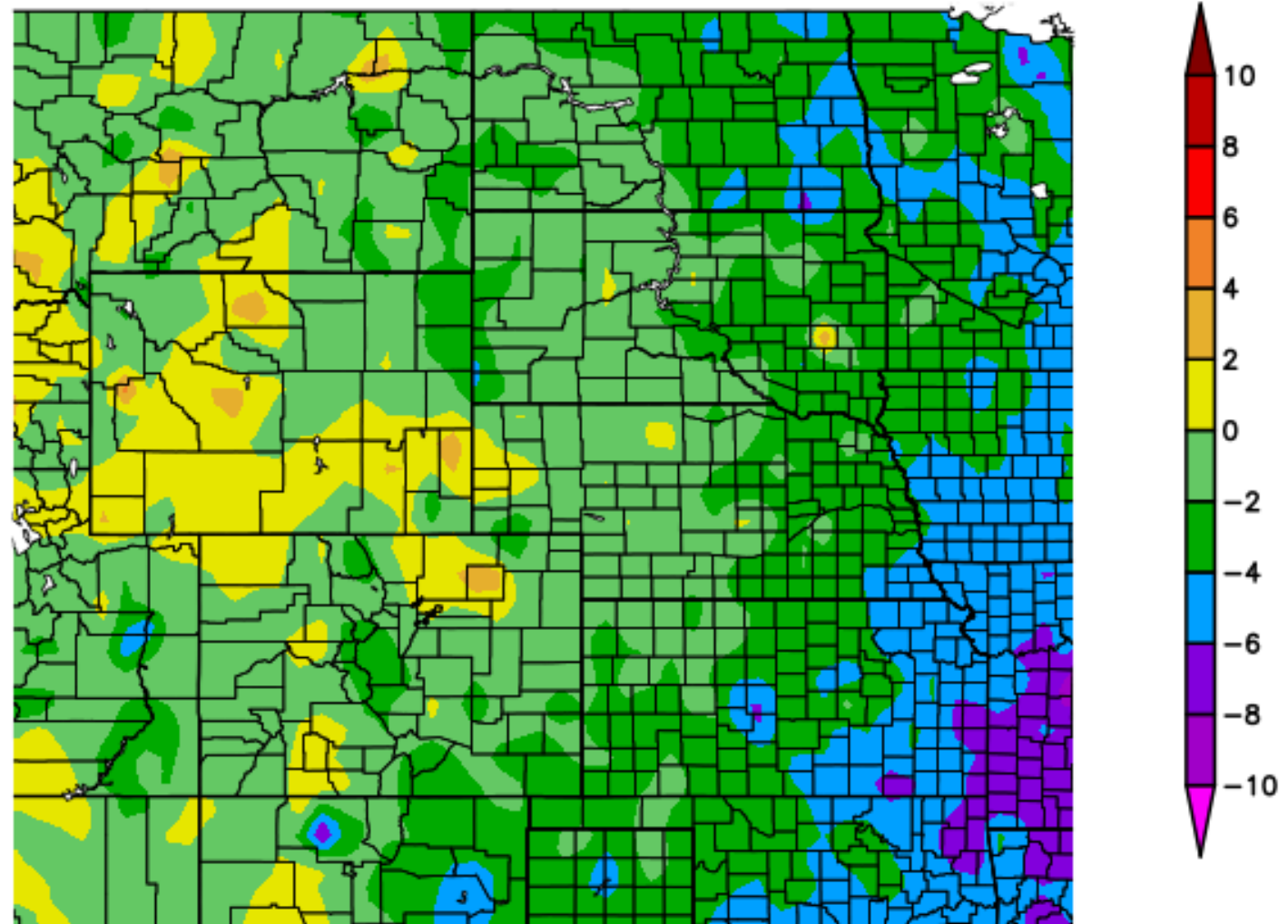
Nebraska Percent Area





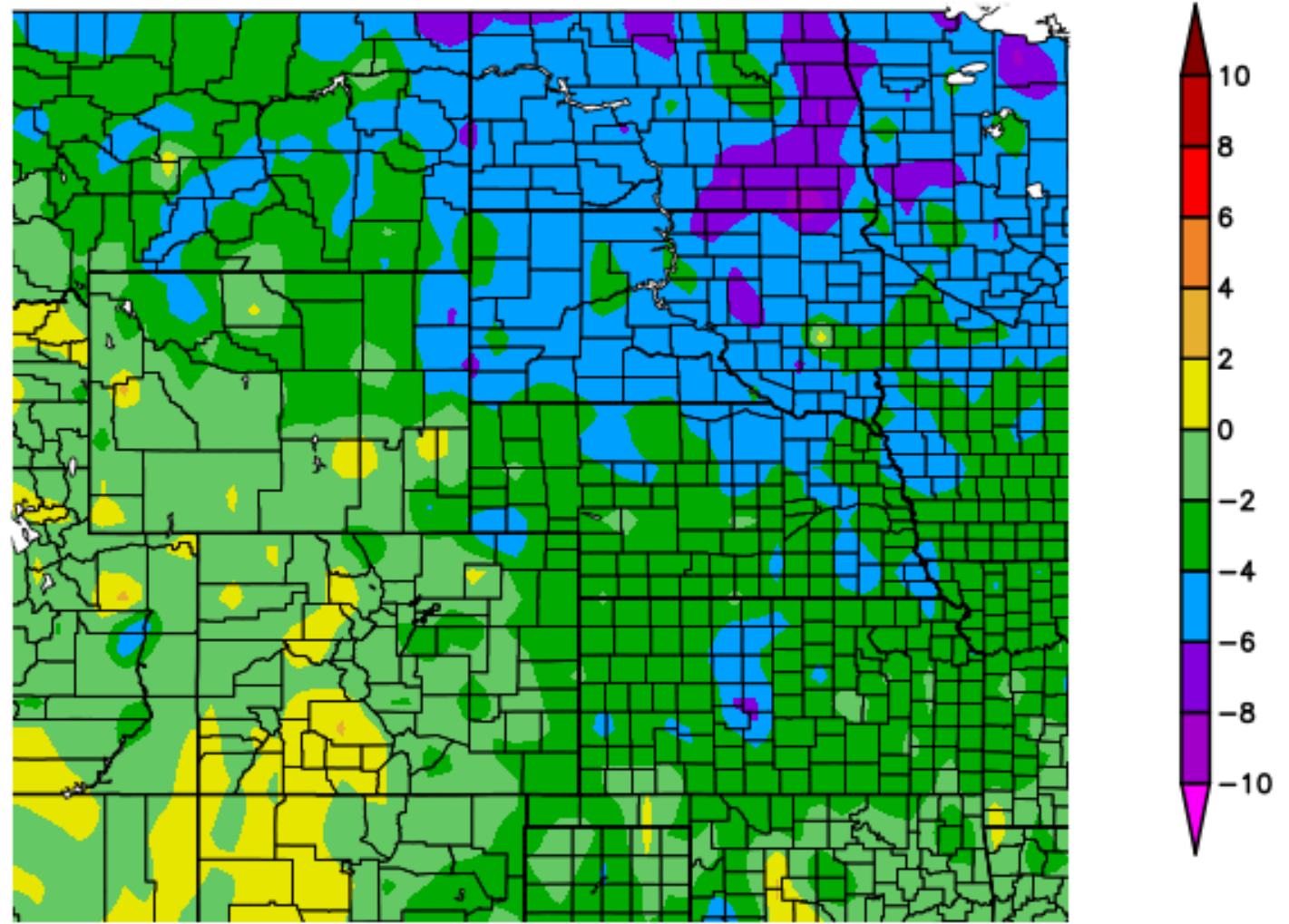
Departure from
Normal
Temperatures over
the last 30 days

Departure from Normal Temperature (F)
10/19/2018 – 11/17/2018

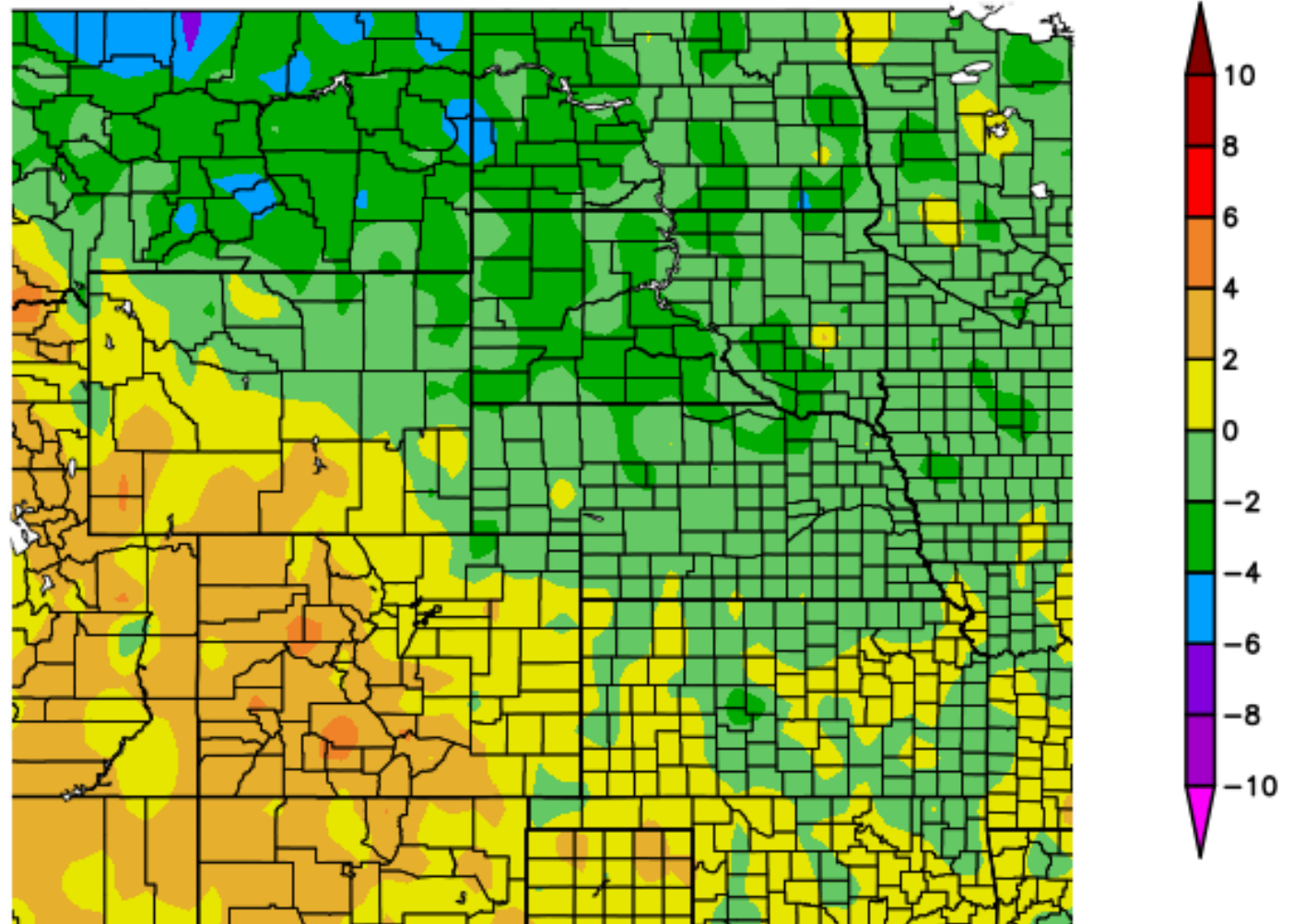


Departure from
Normal
Temperatures over
the last 60 days

Departure from Normal Temperature (F)
9/19/2018 – 11/17/2018



Departure from Normal Temperature (F)
1/1/2018 – 11/17/2018



Departure from
Normal
Temperatures for the
Calendar Year

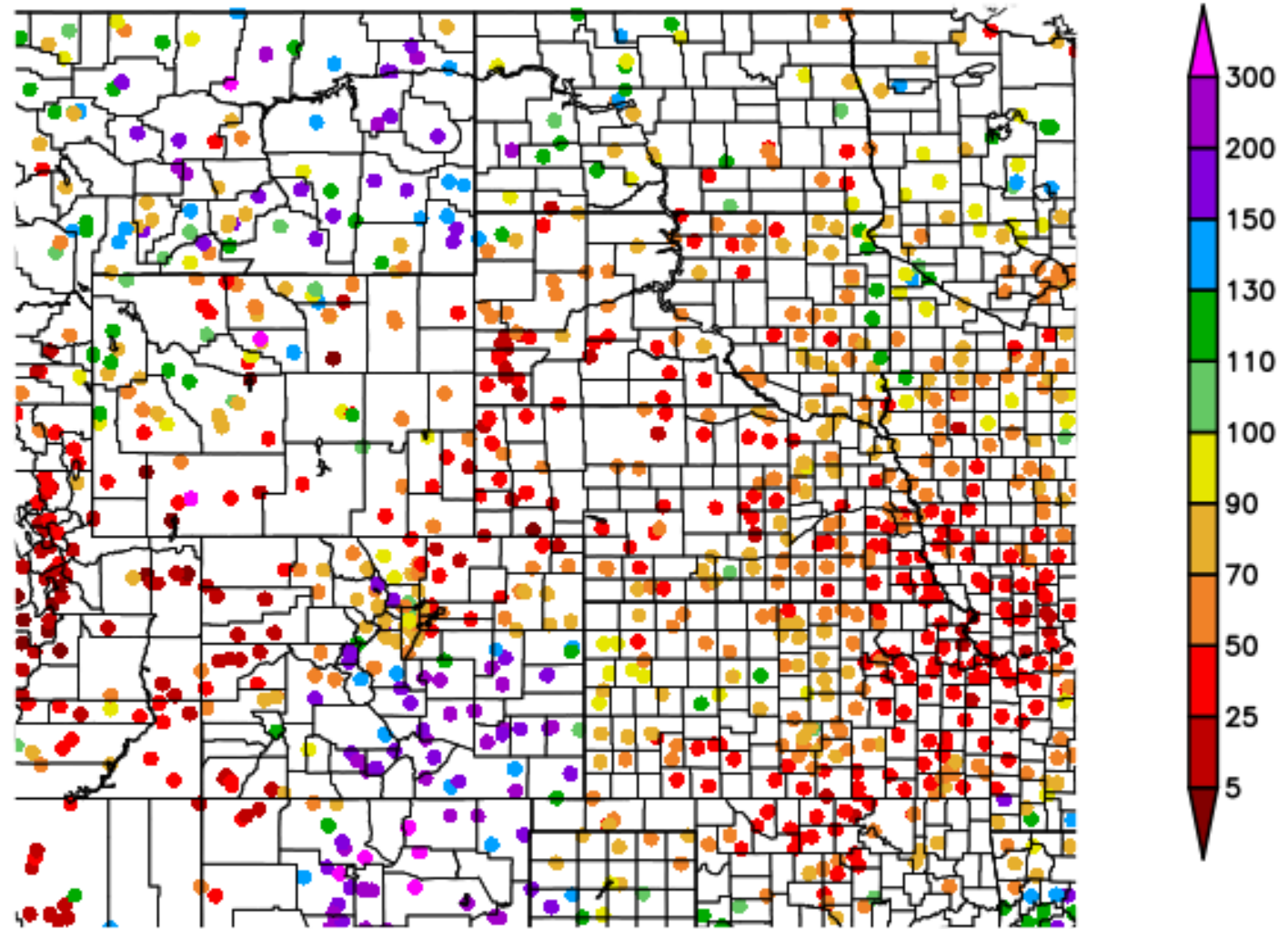
Generated 11/18/2018 at HPRCC using provisional data.

NOAA Regional Climate Centers

NATIONAL DROUGHT MITIGATION CENTER

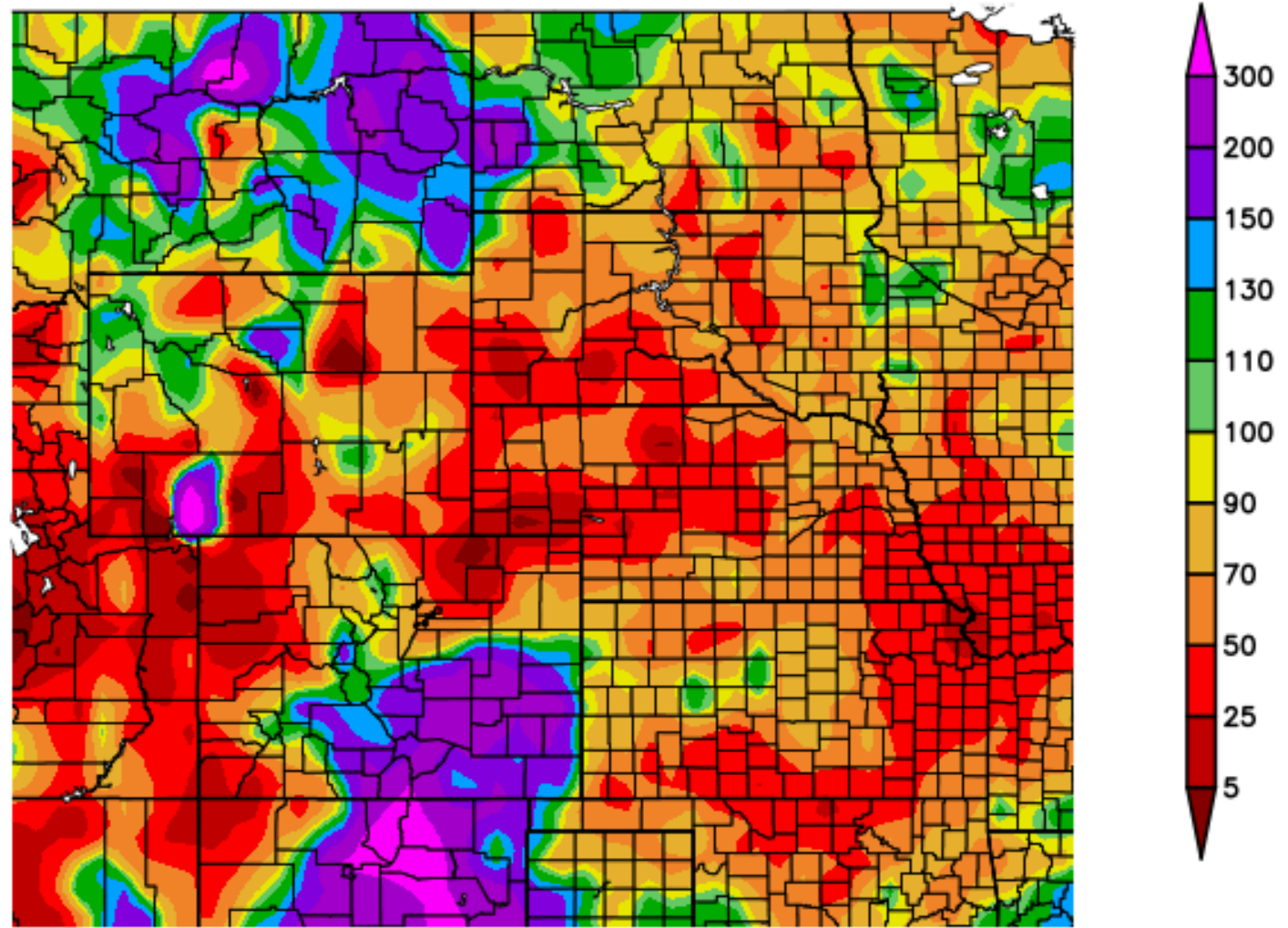
Percent of Normal Precipitation (%)
10/19/2018 – 11/17/2018

Percent of
Normal
Precipitation
over the last 30
days



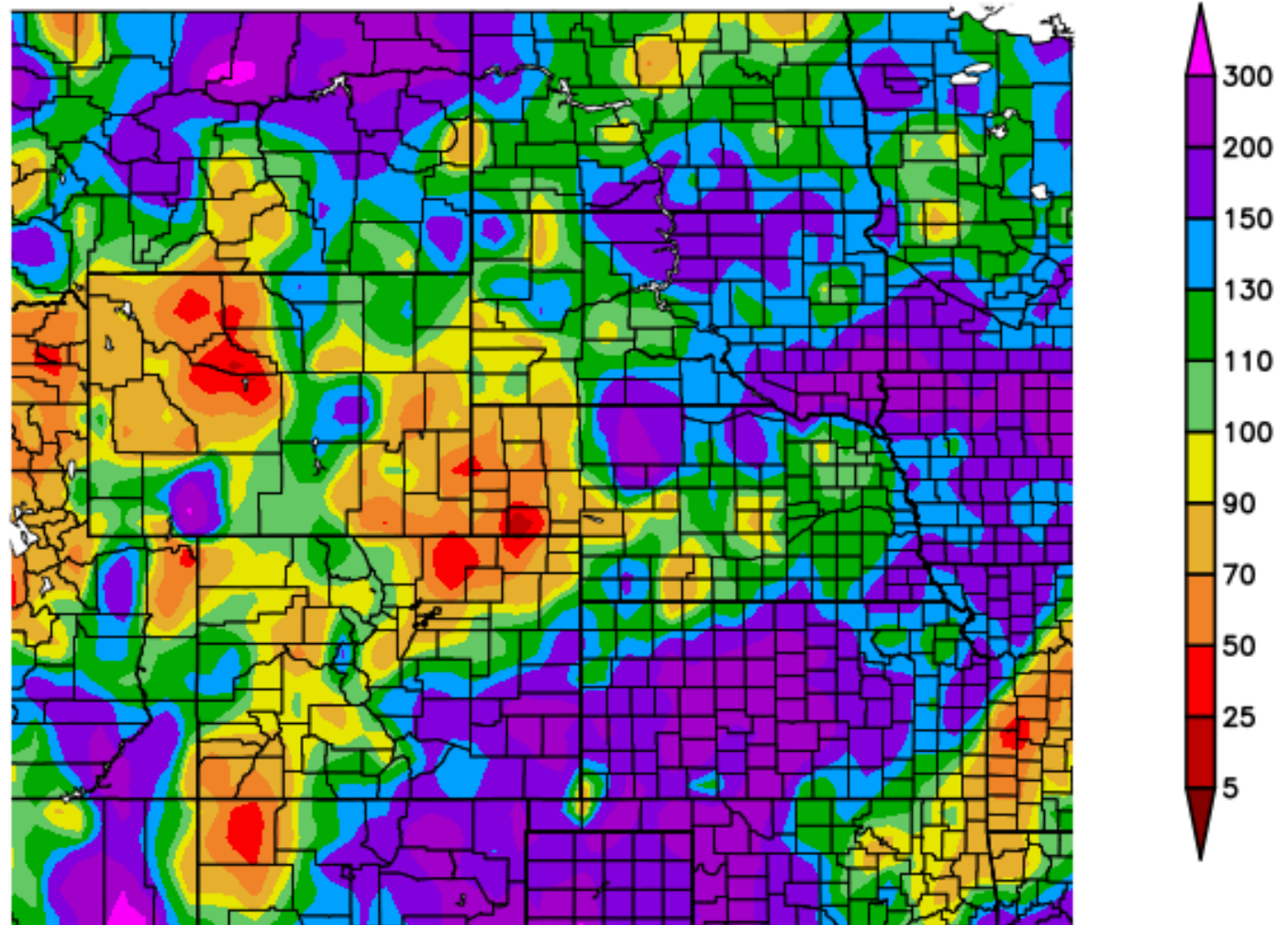
Percent of
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over the last 30
days

Percent of Normal Precipitation (%)
10/19/2018 – 11/17/2018



Percent of
Normal
Precipitation
over the last 60
days

Percent of Normal Precipitation (%)
9/19/2018 – 11/17/2018



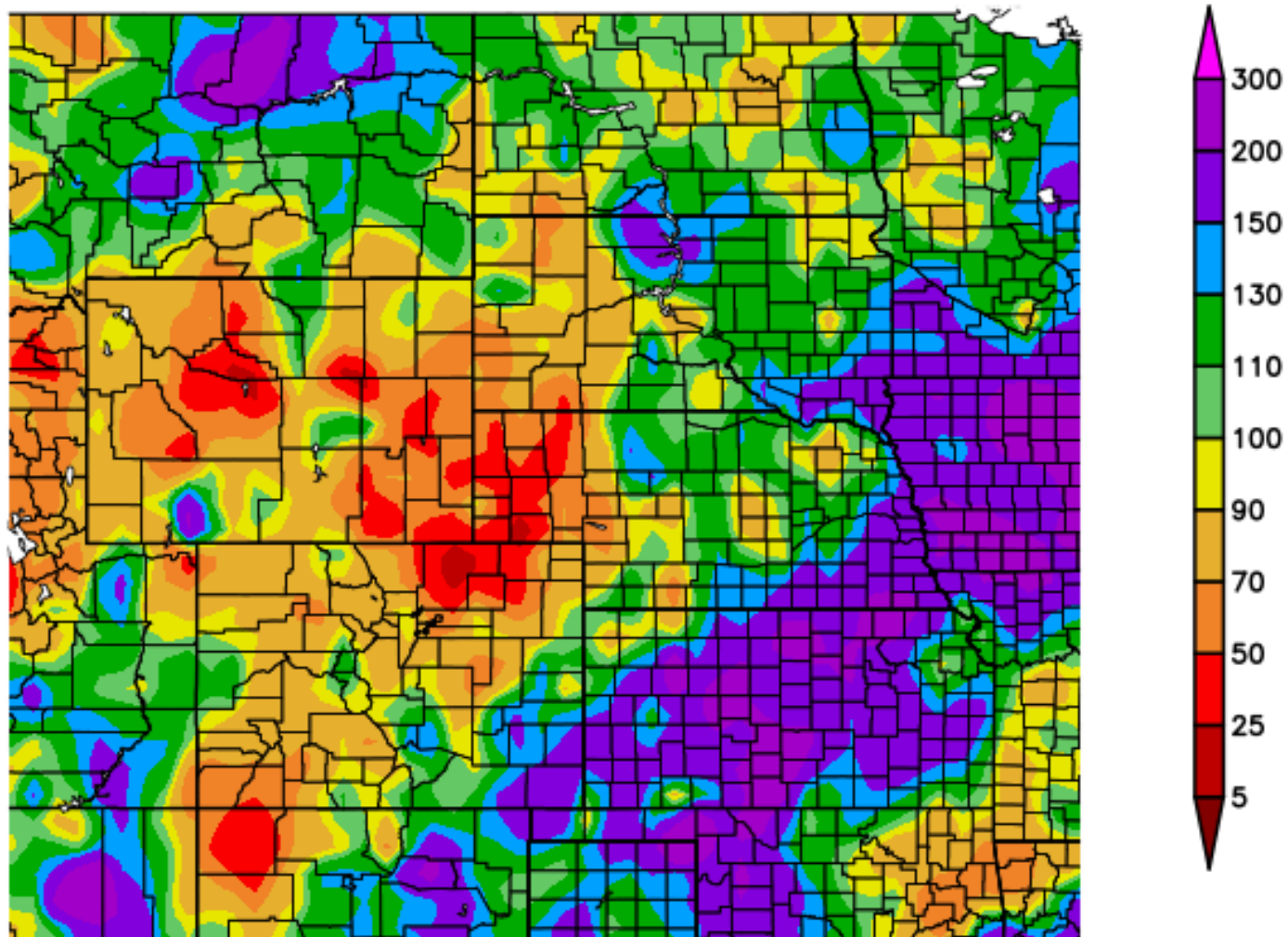
Generated 11/18/2018 at HPRCC using provisional data.

NOAA Regional Climate Centers

NATIONAL DROUGHT MITIGATION CENTER

Percent of
Normal
Precipitation
over the last 90
days

Percent of Normal Precipitation (%)
8/20/2018 – 11/17/2018



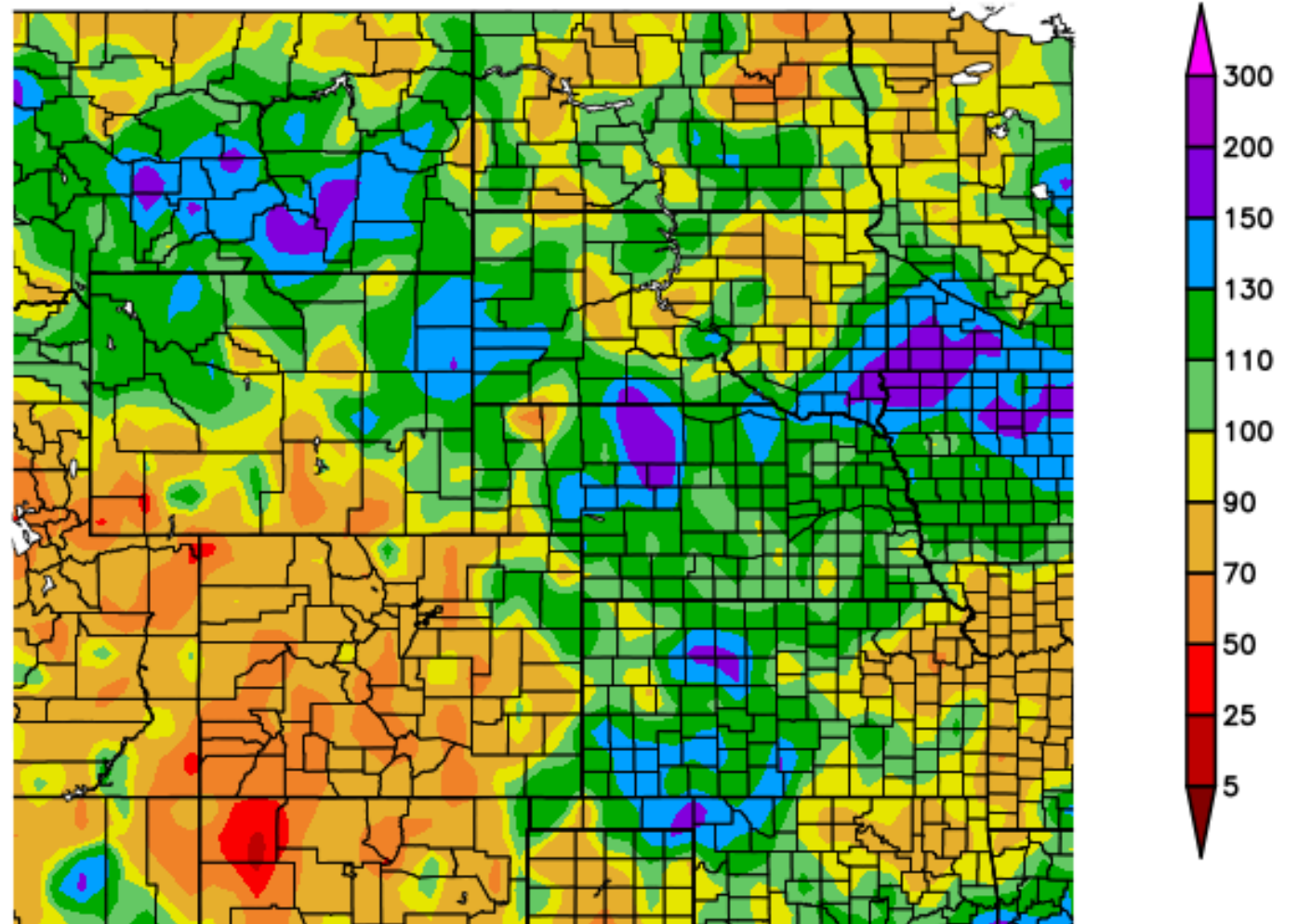
Generated 11/18/2018 at HPRCC using provisional data.

NOAA Regional Climate Centers

NATIONAL DROUGHT MITIGATION CENTER

Percent of Normal Precipitation (%)
1/1/2018 – 11/17/2018

Percent of
Normal
Precipitation for
the calendar
year



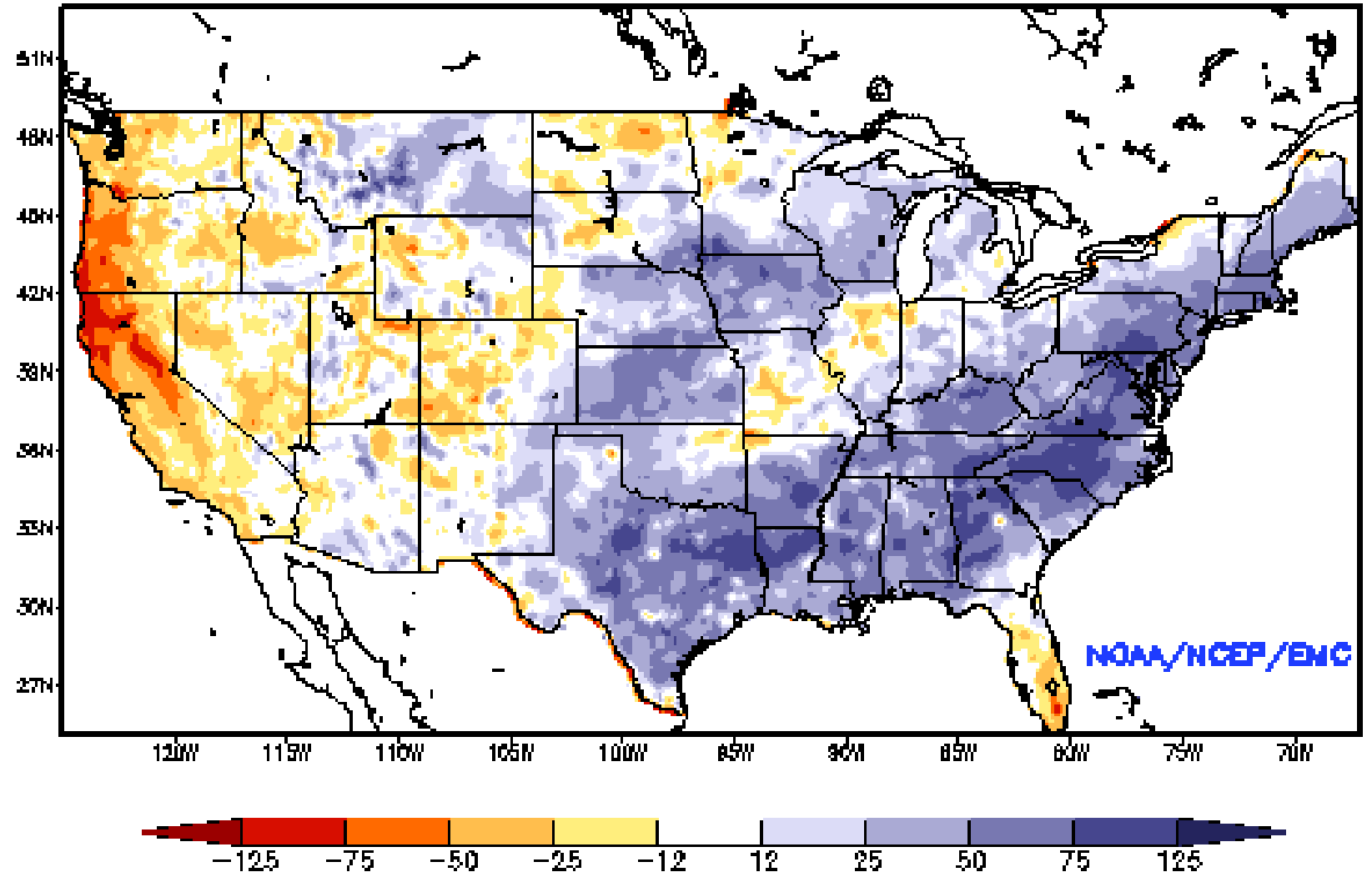
Generated 11/18/2018 at HPRCC using provisional data.

NOAA Regional Climate Centers

NATIONAL DROUGHT MITIGATION CENTER

NLDAS Soil Moisture Model: Current Soil Moisture Anomaly

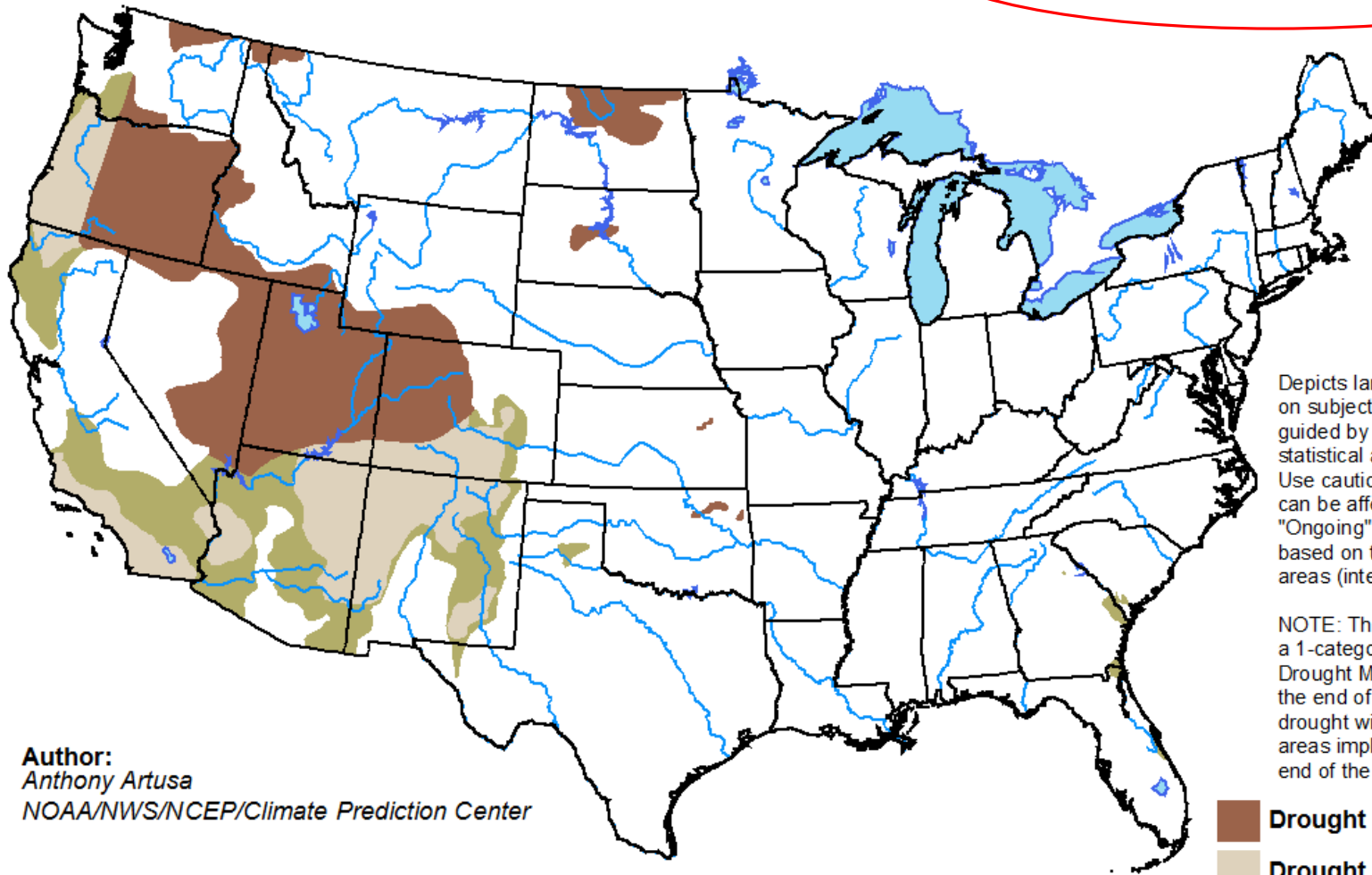
Ensemble-Mean – Current Top 1M Soil Moisture Anomaly (mm)
NCEP NLDAS Products Valid: NOV 14, 2018



U.S. Seasonal Drought Outlook

Drought Tendency During the Valid Period





Valid for November 15, 2018 - February 28, 2019
Released November 15, 2018

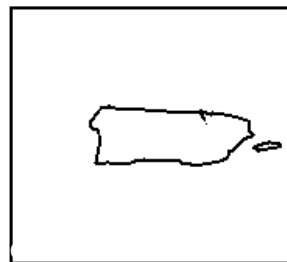
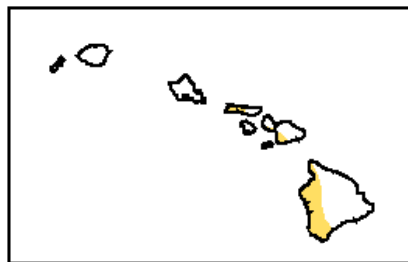
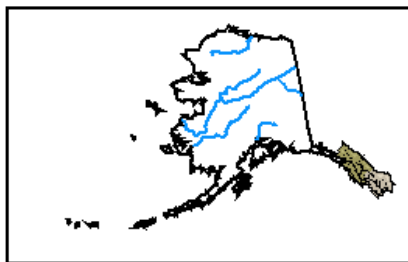


Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short lived events. "Ongoing" drought areas are based on the U.S. Drought Monitor areas (intensities of D1 to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

Author:
Anthony Artusa
NOAA/NWS/NCEP/Climate Prediction Center

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



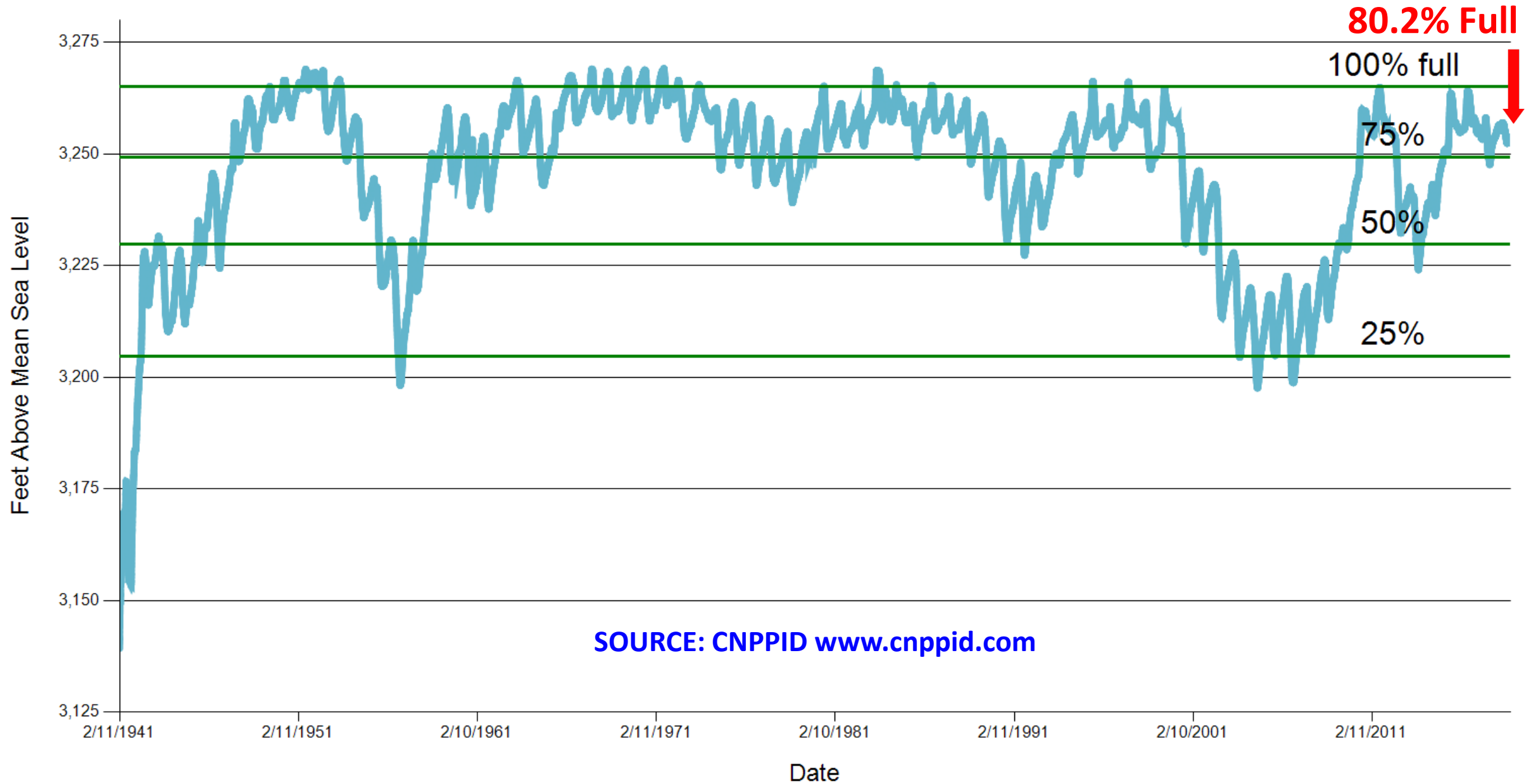
<http://go.usa.gov/3eZ73>

Climate/Drought Summary

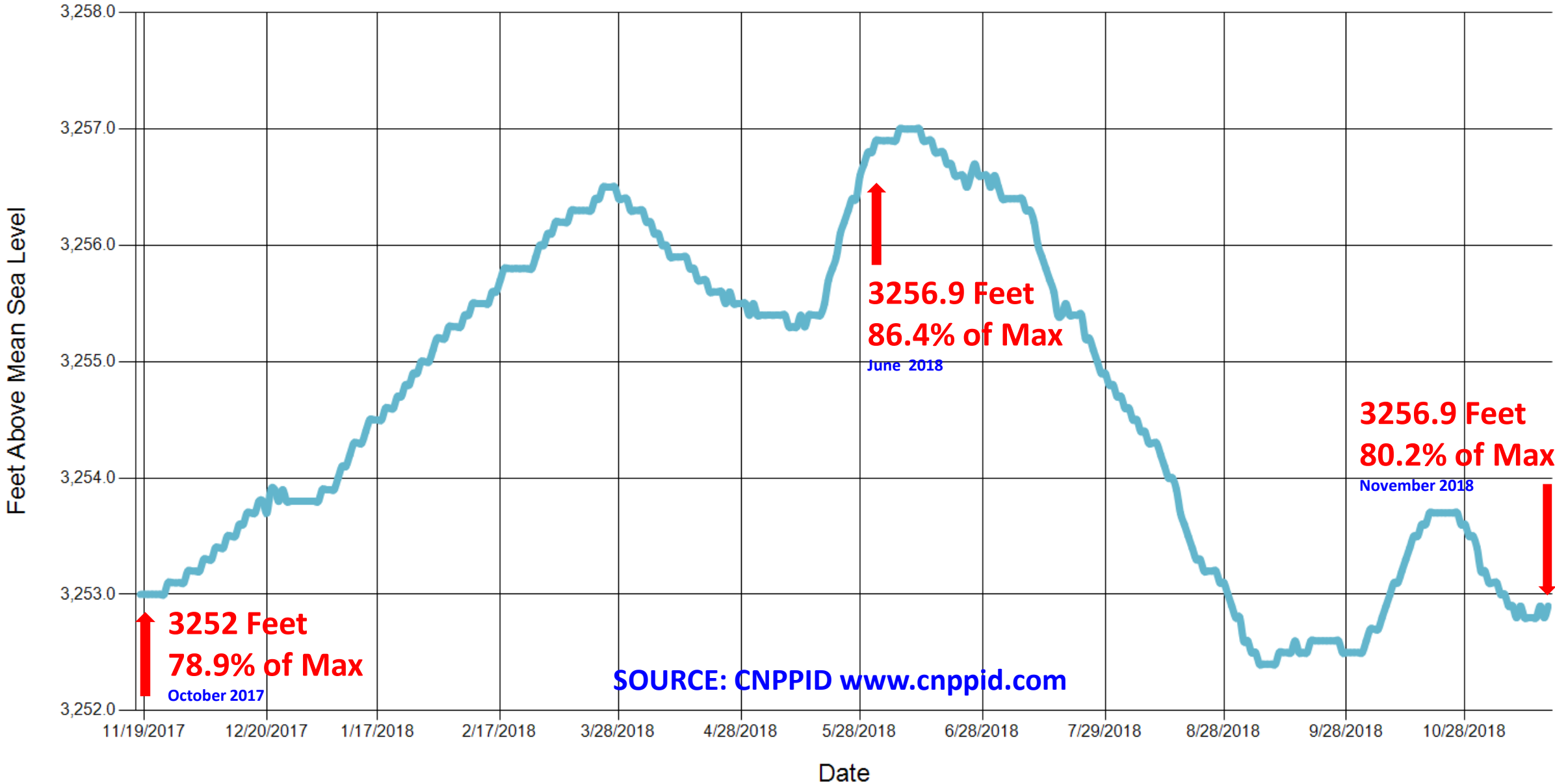
- Cooler than normal conditions have dominated the state and region so far in 2018 with Nebraska averaging about 1-2 degrees F below normal.
- Almost the entire state of Nebraska has recorded above normal precipitation for this year so far with areas of northcentral Nebraska 8-12 inches above normal.
- Over the last 60 days, the entire region has been below normal for temperatures with the northern portions of the Plains 4-6 F below normal and the southern portions 2-4 F below normal.
- Nebraska is drought free and has been since early September. The last time Nebraska was drought free was at the end of June 2017.
- Drought has not been a widespread issue in Nebraska for the last several years with very little severe drought since the Summer of 2014.
- The seasonal drought outlooks do not show drought conditions developing in Nebraska through the end of February 2019.

Nebraska Water Supply Update...

Lake McConaughy Elevation since 1941



Lake McConaughy Elevation (One Year)



November 2018 CARC Meeting

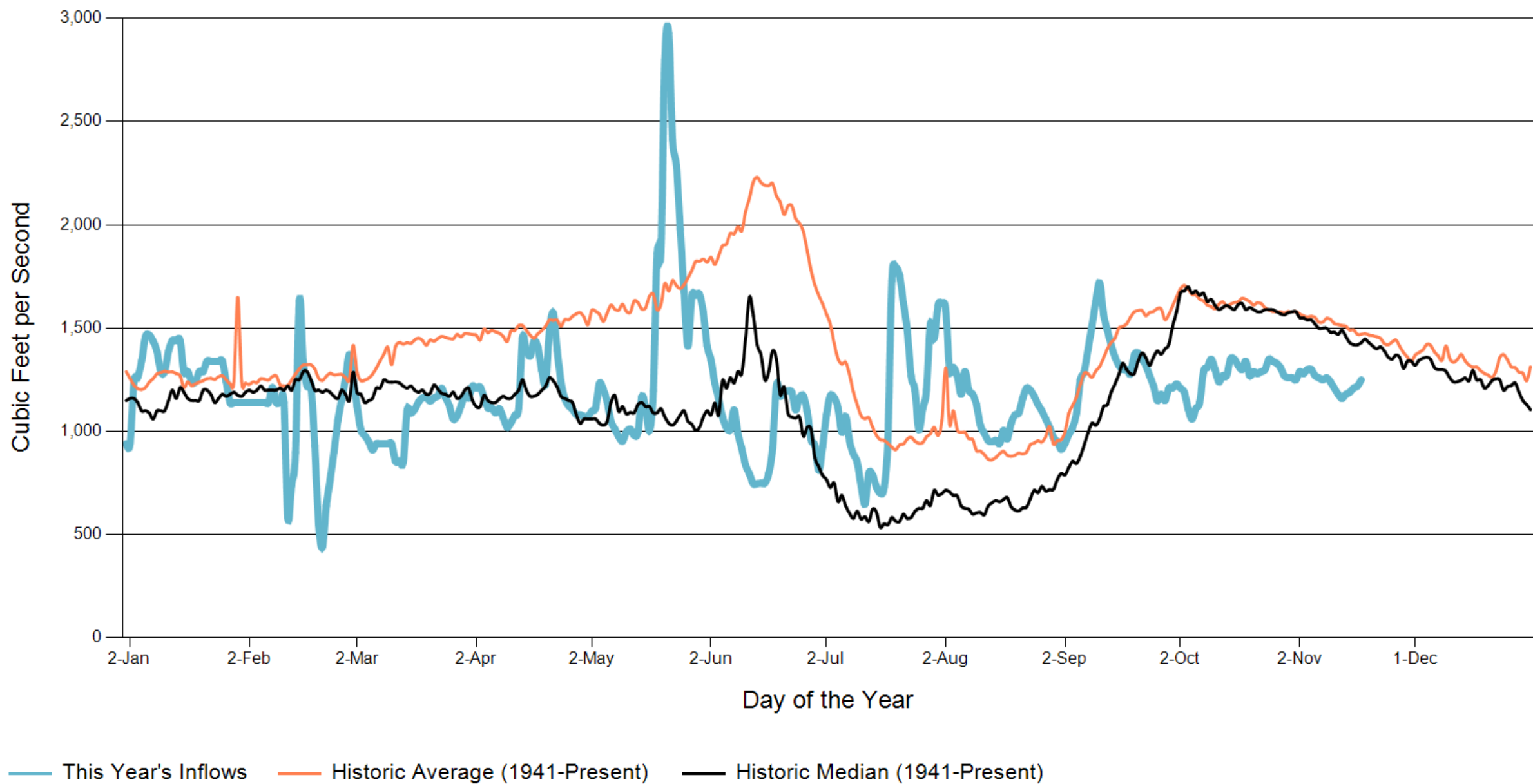


River & Canal Flows

Station	Today (Cubic Feet per Second)	1 Week Ago	1 Month Ago	1 Year Ago
Inflows to McConaughy	1,250	1,140	1,290	1,180
Total Outflows from McConaughy	970	977	1,065	789
North Platte at Keystone	30	35	962	265
Keystone Diversion	940	942	103	524
North Platte at North Platte	422	513	703	585
South Platte at Roscoe	113	58.7	101	186
South Platte at North Platte	206	175	220	265
Supply Canal Diversion	1,289	1,734	1,049	1,050
Platte at Overton	763	2,410	533	1,840
Platte at Kearney	1950	2020	1820	755
Platte at Grand Island	904	1710	1160	1180

SOURCE: CNPPID www.cnppid.com

Lake McConaughy Inflows



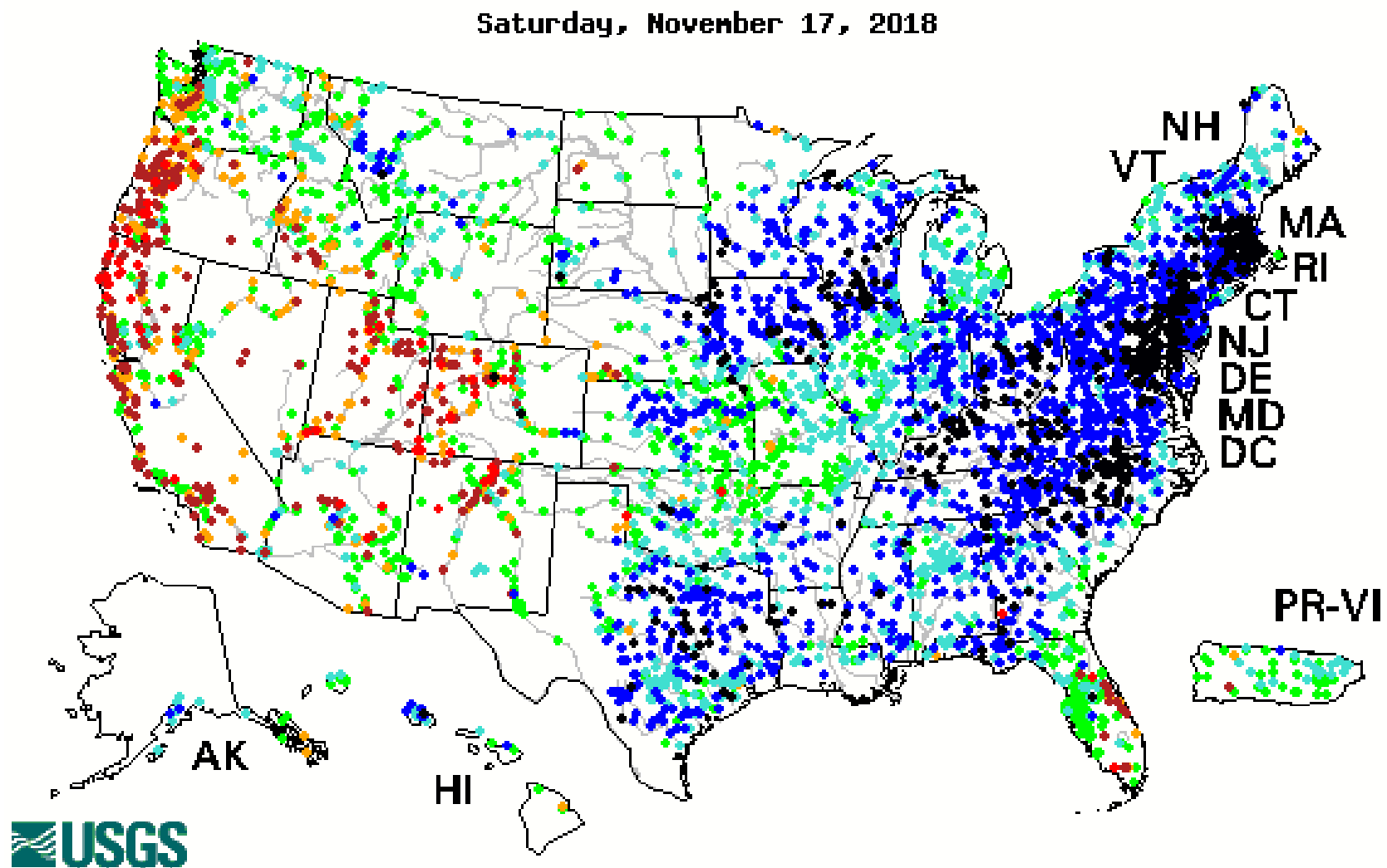
Lake McConaughy

Civil engineer Cory Steinke reported that the water level at Lake McConaughy has declined recently due to water releases from the Environmental Account at the reservoir. The lake is currently at elevation 3253.1 feet above sea level or 1.4 million acre feet (80.5 percent of capacity). Inflows at Lewellen are approximately 1,300 cubic feet per second, which Steinke said is a good flow for this time of year, despite being slightly below average. He added that the water releases from the Environmental Account will taper off mid-month, and he expects the total release from the lake for fall whooping crane migration to be approximately 36,000 acre-feet of water.

SOURCE: CNPPID News Release, November 5, 2018

www.cnppid.com

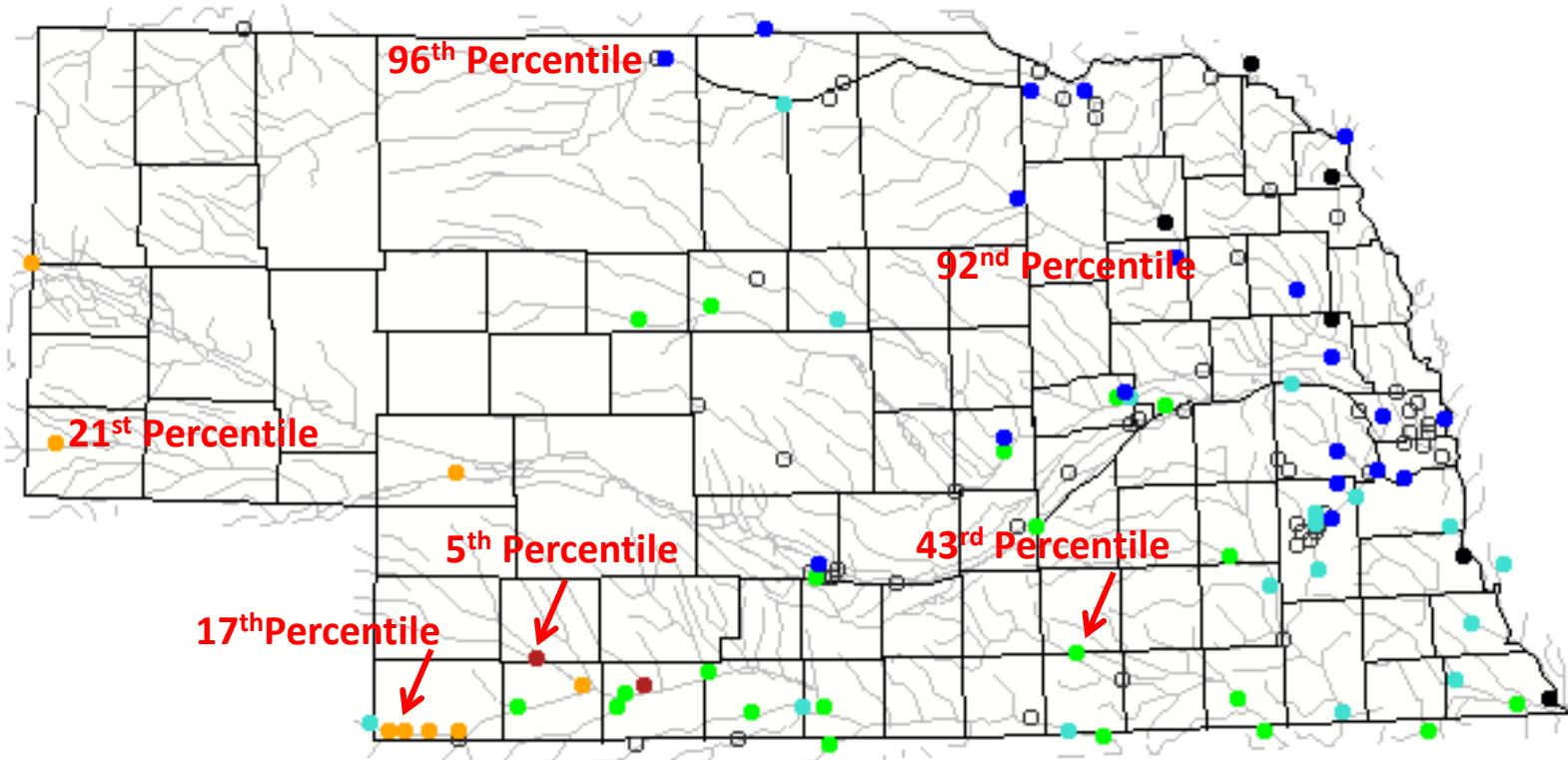
14-day average streamflow compared to historical streamflow for the day of year



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

Saturday, November 17, 2018



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

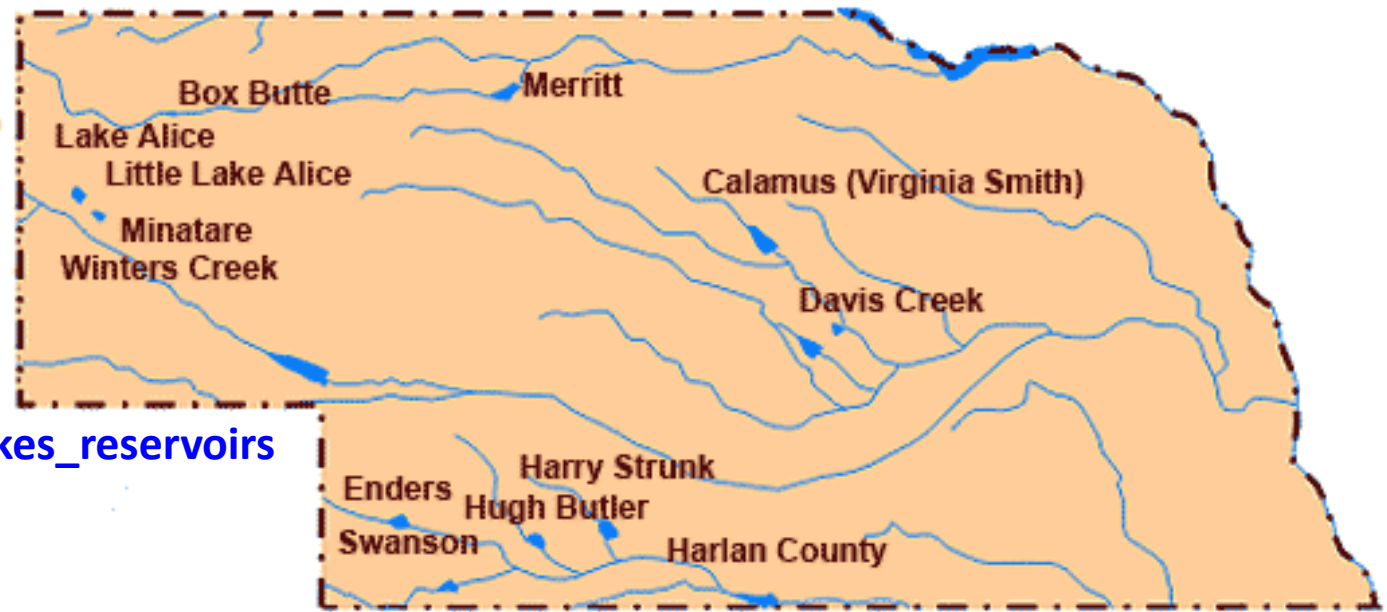
Hugh Butler: 51.4%(50.7%) of conservation pool

Enders: 21.1% (22.7%) of conservation pool

Harry Strunk: 78.2%(100%) of conservation pool

Swanson: 49.6% (63.2%) of conservation pool

*values in red are from the last
CARC meeting in June 2018.



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 June 2018.

- ✓ Conservation Pool is 74.9% full (82.2%)
- ✓ 235,625 Acre-Feet in storage compared to 258,075 Acre-Feet (AF) of water in storage during June 2018
- ✓ Last year at this time, 219,693 AF was in storage (November 2017)
- ✓ Historical average storage for this time of the year is 214,242 AF

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

Water Supply Summary

- Lake McConaughy is currently 80.2 percent of capacity which is lower than in June 2018 (last CARC meeting) and slightly higher compared to levels in November 2017.
- The Republican River basin reservoirs are lower than in June as water levels dropped due to the irrigation season and are stabilizing with fall diversions into the systems.
- Harlan County Reservoir is holding about 22,450 acre-feet less water now than in June 2018.
- Harlan County is holding about 16,000 acre-feet more water now than at this time last year and is about 21,000 AB above average for this time of year.
- All reservoir levels and storage should hold steady until the spring run-off.



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