



NEBRASKA STATE
CLIMATE OFFICE

Nebraska Climate Update



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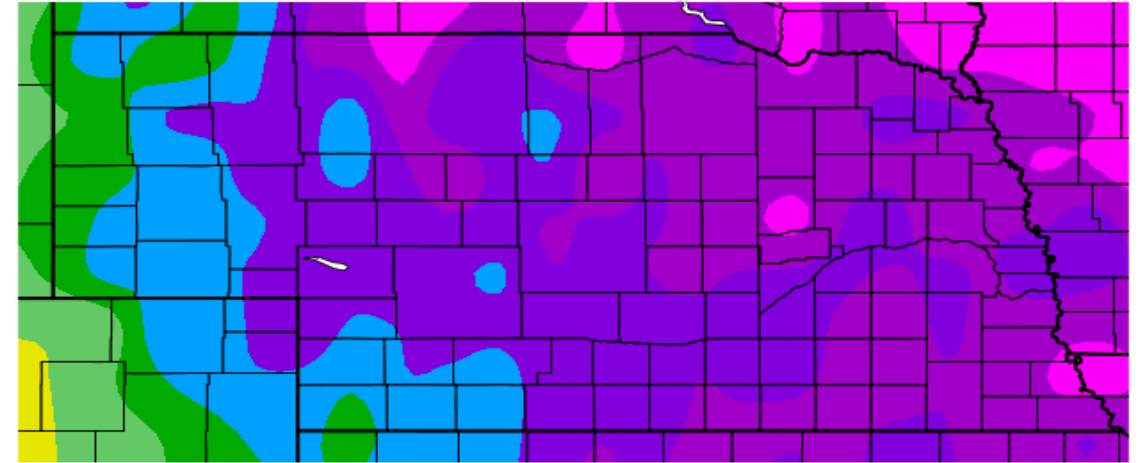
Outline

- ❑ Recent climate history.
- ❑ Where we are now.
- ❑ Climate outlook.
- ❑ Resources.

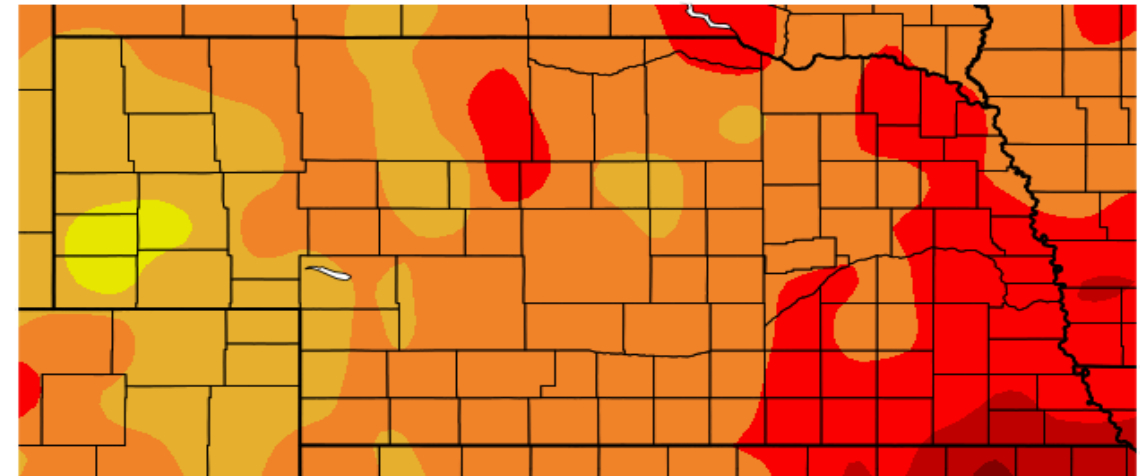
Spring recap

- Cold April (2nd coldest) that resembled March.
Warm May (4th warmest). 15 F spread in average temperatures between the two months.
- Dry conditions southeast 1/3 of the state, including south central Nebraska.
- Blizzard mid-April intensified planting delays, especially northeast and north central Nebraska.

April Temperature Departure (°F)



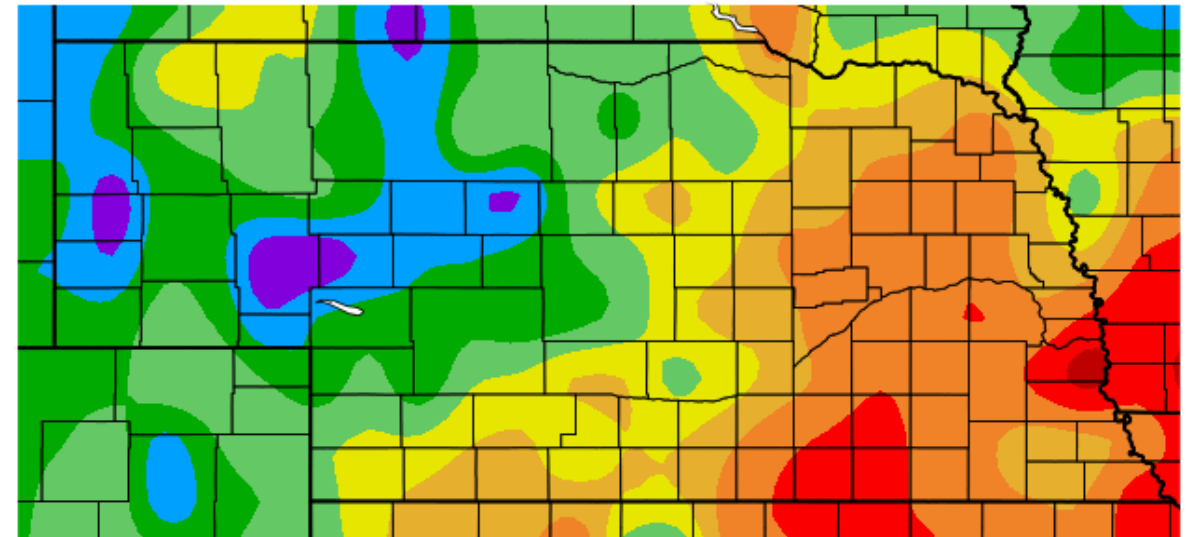
May Temperature Departure (°F)



Spring impacts

- Dry conditions for southeast. Three month departure from normal moisture is 4 – 6 inches.
- Planting delays due to wet, cold conditions north, cold south. Later planting date but quicker growth with rapid warm-up.
- Southern half of Nebraska was 7-14 days ahead of eastern corn belt in regards to corn emergence. Stress reported on newly emerged corn due to 90+ temps

Departure from Normal Precipitation (in)
3/1/2018 – 5/31/2018



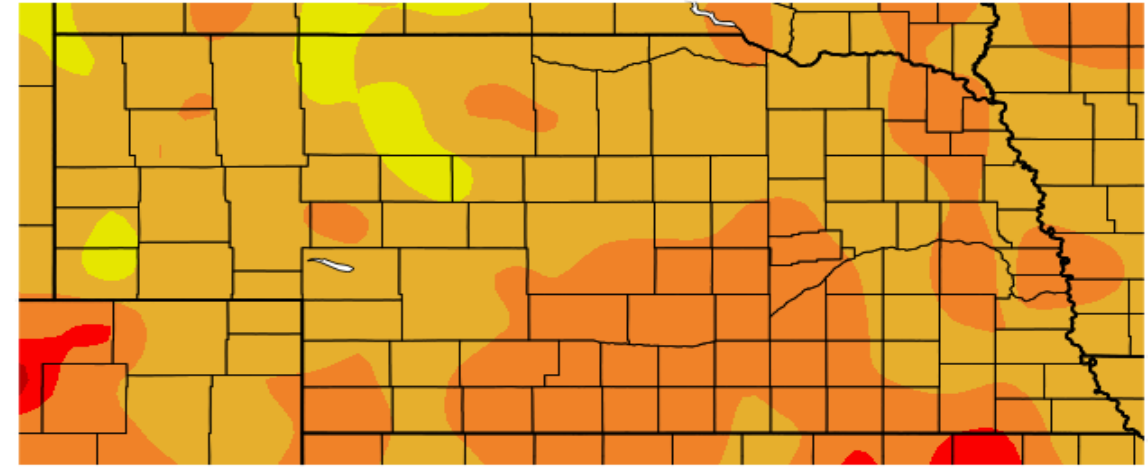
Generated 6/10/2018 at HPRCC using provisional data.

NOAA Regional Climate Centers

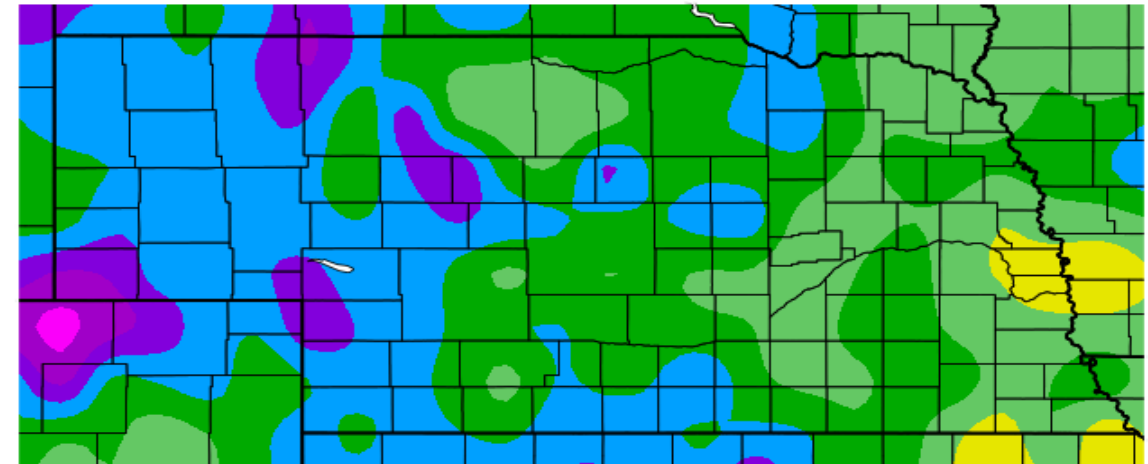
Summer recap

- Heat continued into June, GDD accumulations for May and June were over 10% ahead of normal, normal accumulations during July and August.
- Heavy rainfall northeast early and late June impeding field work, spraying, and hay harvest. Challenging hay season.
- Some limited relief to stressed crops end of June/early July from rainfall events for NE Nebraska.

June Temperature Departure (°F)



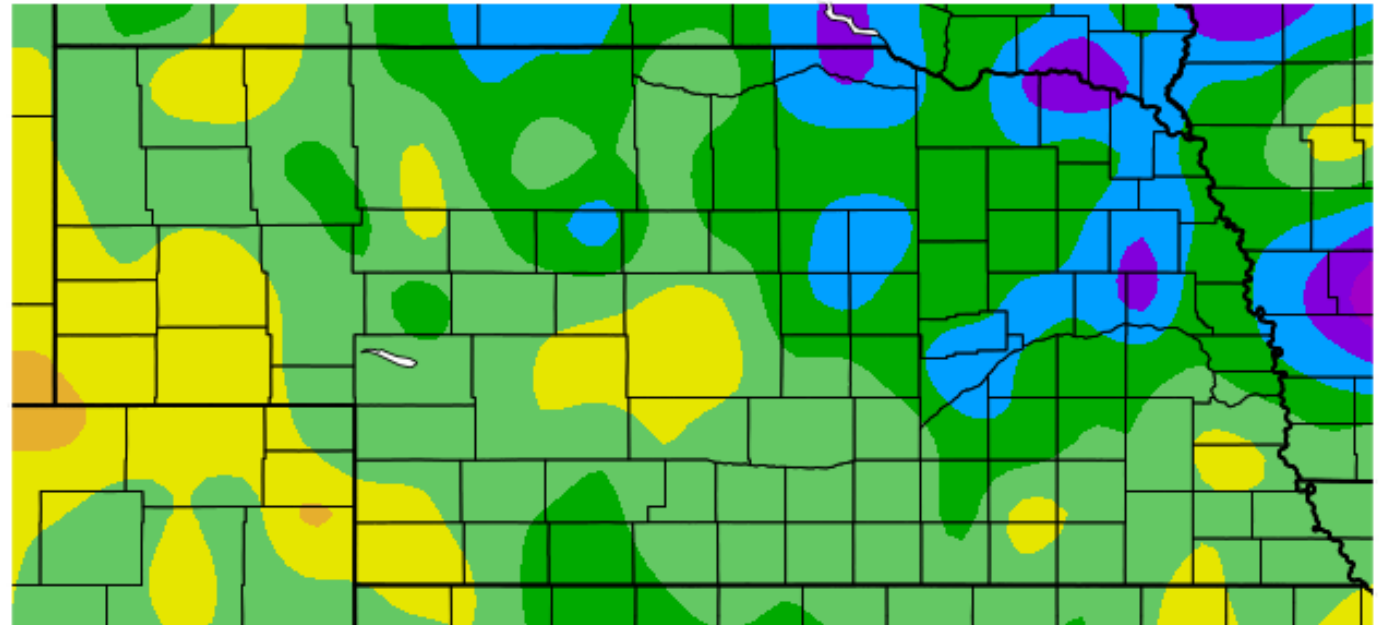
August Temperature Departure (°F)



Summer recap

- Irrigation demand well below normal due to above normal rainfall.

Departure from Normal Precipitation (in)
6/1/2018 – 8/31/2018

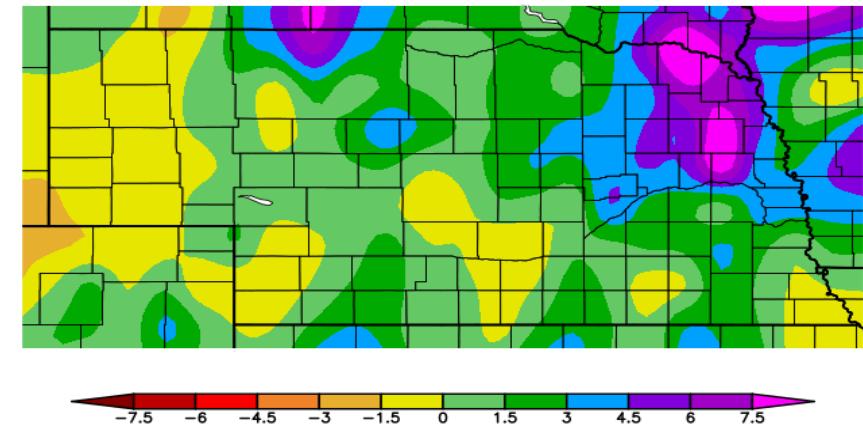


Summer impacts

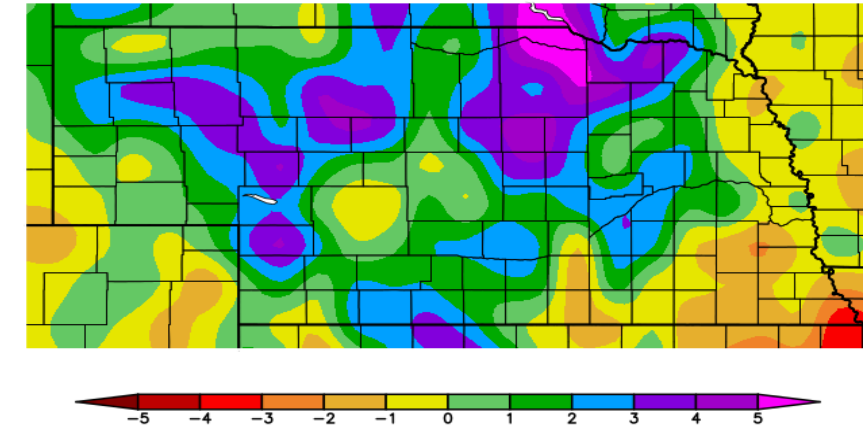
- Persistently dry conditions mid-July through mid-August across eastern Nebraska. Extension Educators reported pockets of soybean stress across eastern 1/3 of the state.
- Late season dryness developed western 1/3 of the state.
- Persistently dry conditions during all of August across northeast.
- Heavy rainfall across SE and SC Nebraska at the end of August.

Precipitation Departure (in)

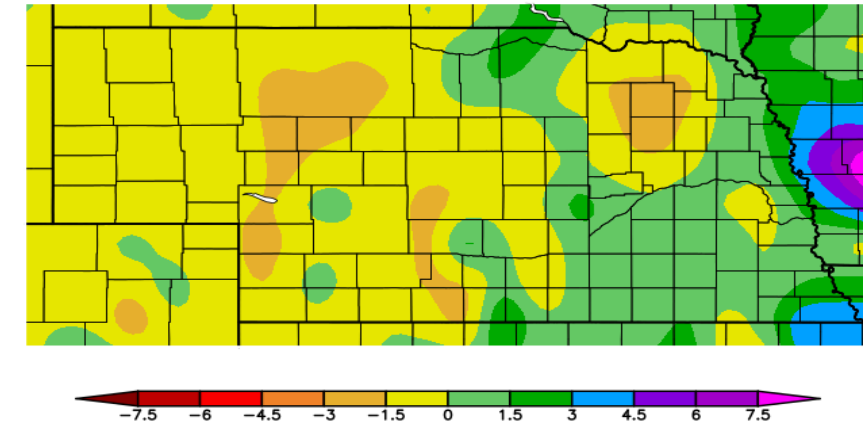
June



July



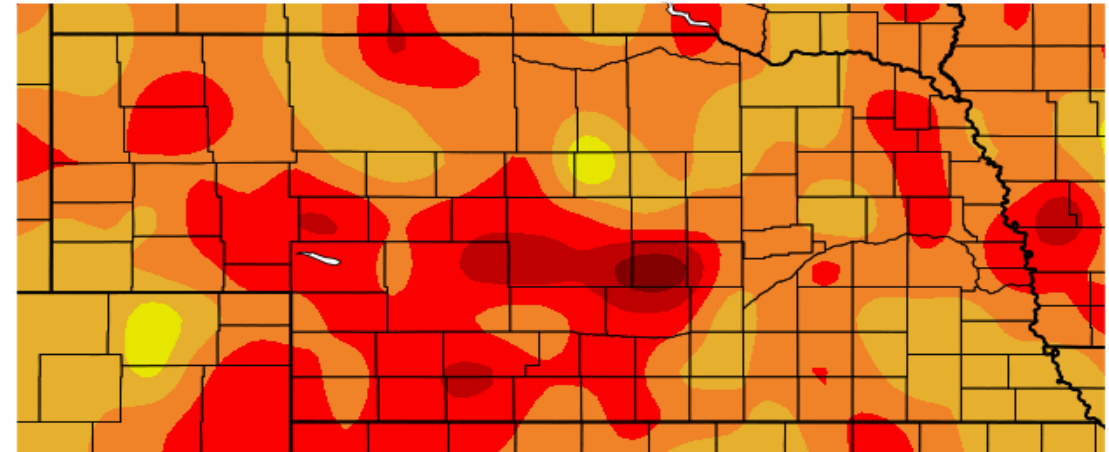
August



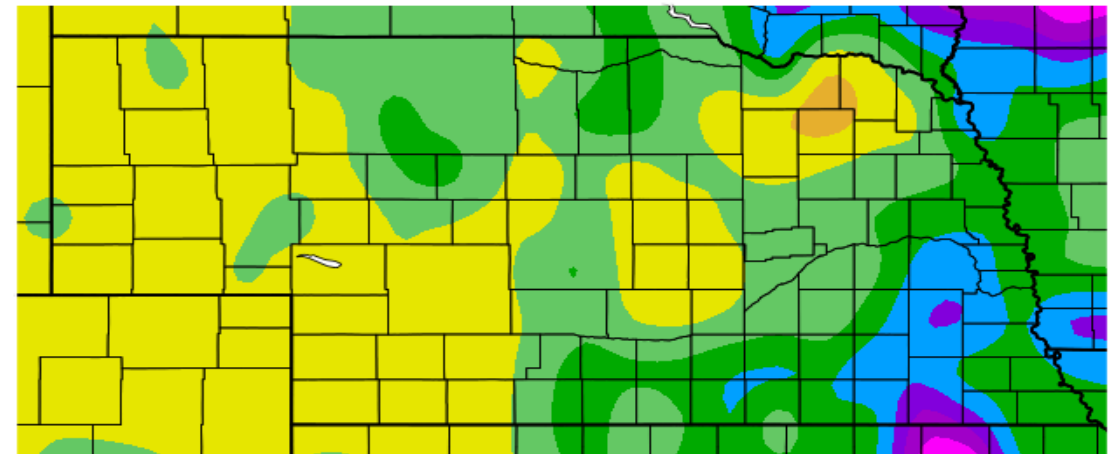
September

- Heavy rainfall SE, SC, EC beginning of September.
- Warm and dry conditions mid-month resulted in ahead of normal crop harvest activity.
- Cool, wet conditions developed toward end of September and dominated much of the first half of October, slowing harvest significantly.

September Temperature Departure (°F)



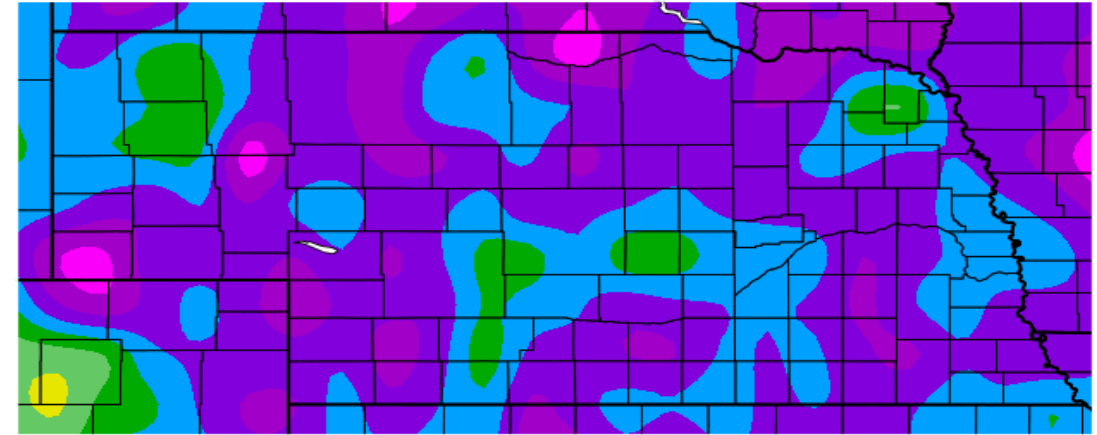
September Precipitation Departure (in)



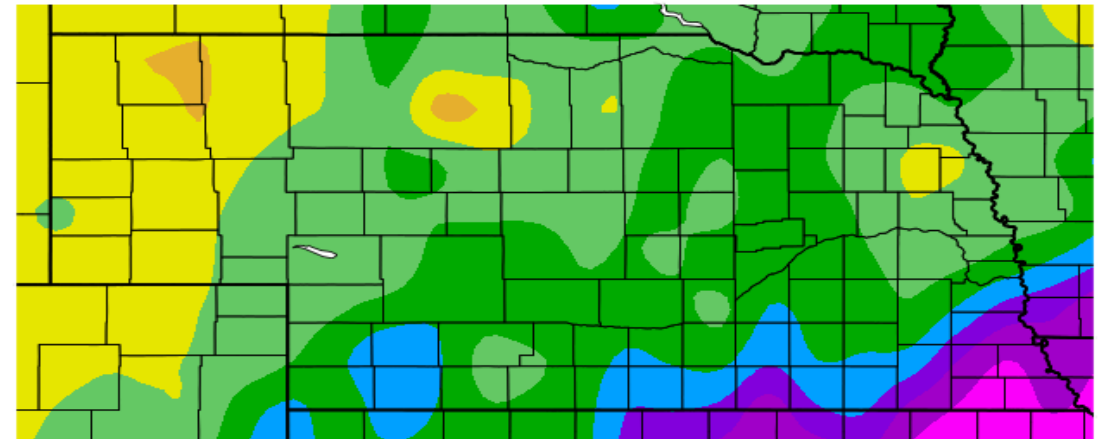
October

- Rain and snow had producers concerned about soybeans swelling and dropping from pods, along with sprouting in pods. Snow totals from 1-8 inches reported Oct 14, heaviest in pockets across SC and SE Nebraska.
- A drying period during the second half of October allowed for decent harvest activity, although a precipitation event (24-25) delayed harvest for several days.

October Temperature Departure (°F)



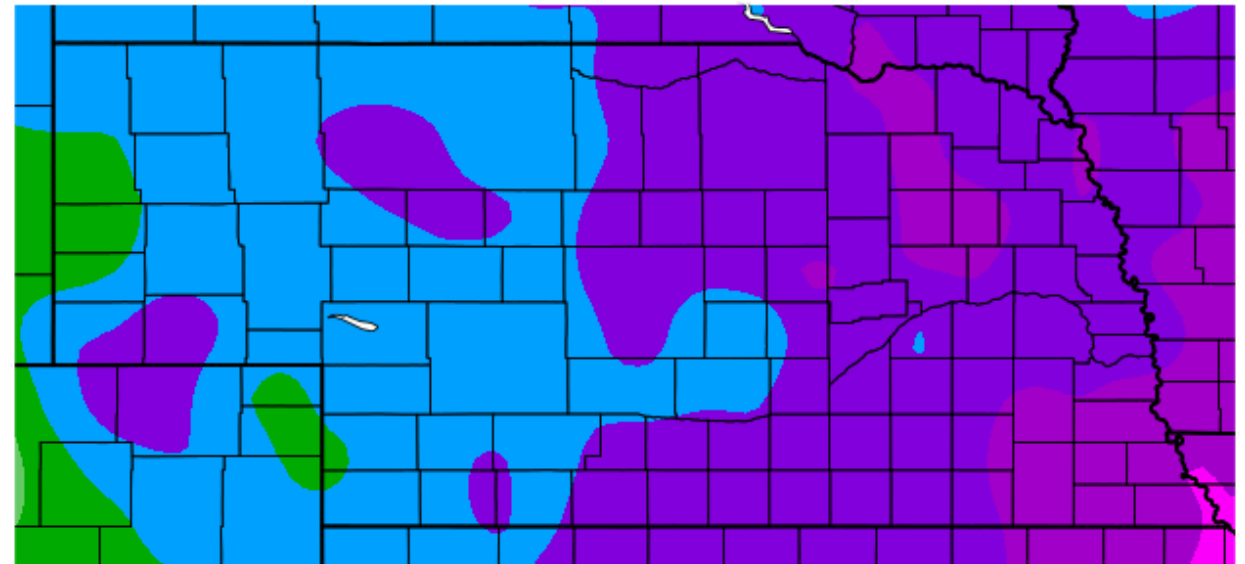
October Precipitation Departure (in)



November

- Harvest delays continued through the first full week of November, followed by a week of excellent harvest weather.
- Snow mid-November slowed harvest activity for a couple of days, but good harvest weather has been the rule since.

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



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

NOAA Regional Climate Centers

Fall impacts

- As wet as harvest weather has been, no-till fields are showing minimal rutting from harvest pressure compared to our neighbors east of us.
- Field compaction and significant rutting has been extensively reported in all of the major corn producing states east and north of Nebraska.



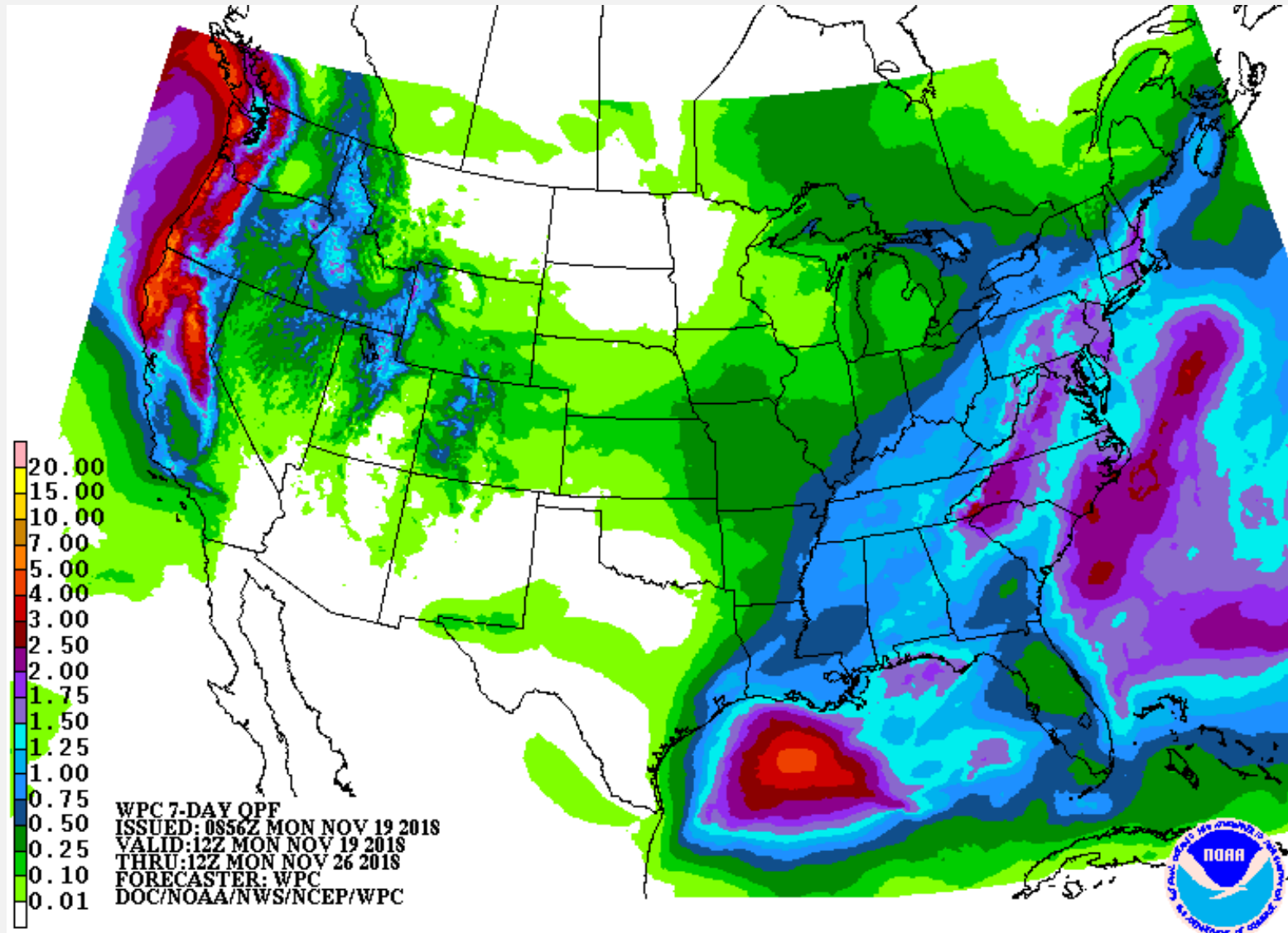
Fall impacts

- Dry conditions have been slowly building across the western half of the state the past 3 months. Quite a bit of concern in regard to wheat conditions across the southern half of the panhandle through mid-October. Extension reported the mid-October snow helped improve crop conditions significantly.
 - Limited yield information, but most extension educators are indicating Groups 1 and 2 soybeans fared significantly better than group 3 and 4 beans.
- Several factors possible: Dryness from mid July through mid-August and extensive wet and cloudy conditions late August may be the culprit.

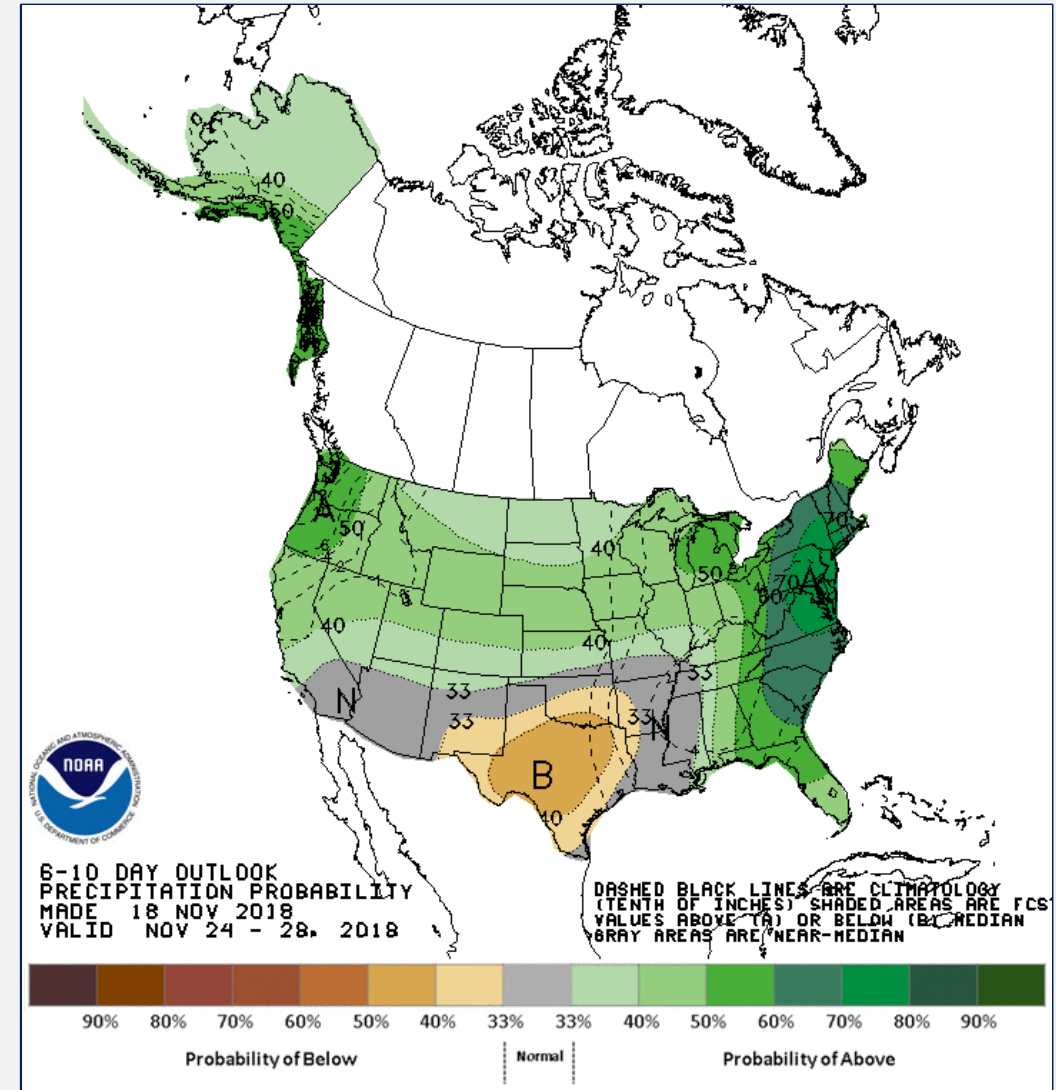
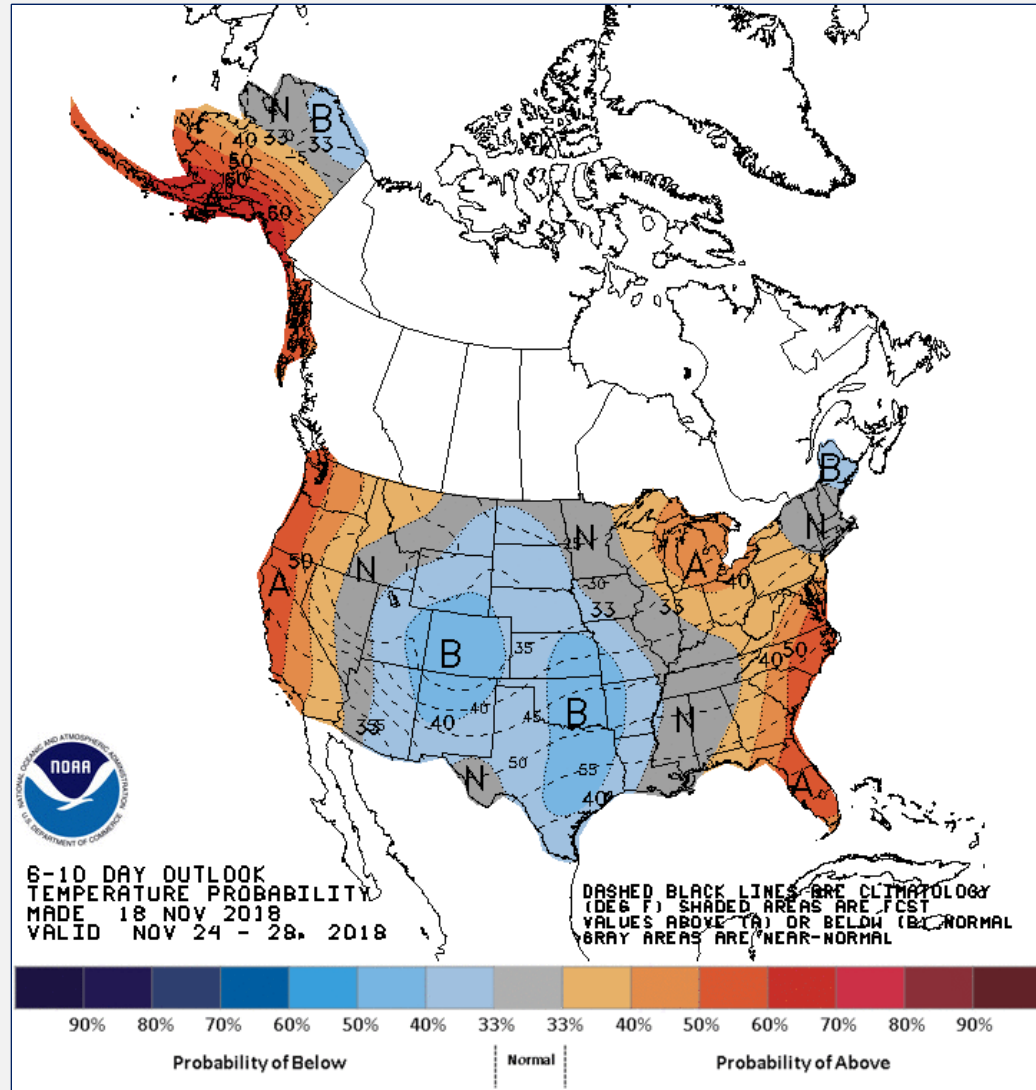
Climate outlook



Precipitation forecast: Nov 19 - 26



Outlook: Nov 24 - 29



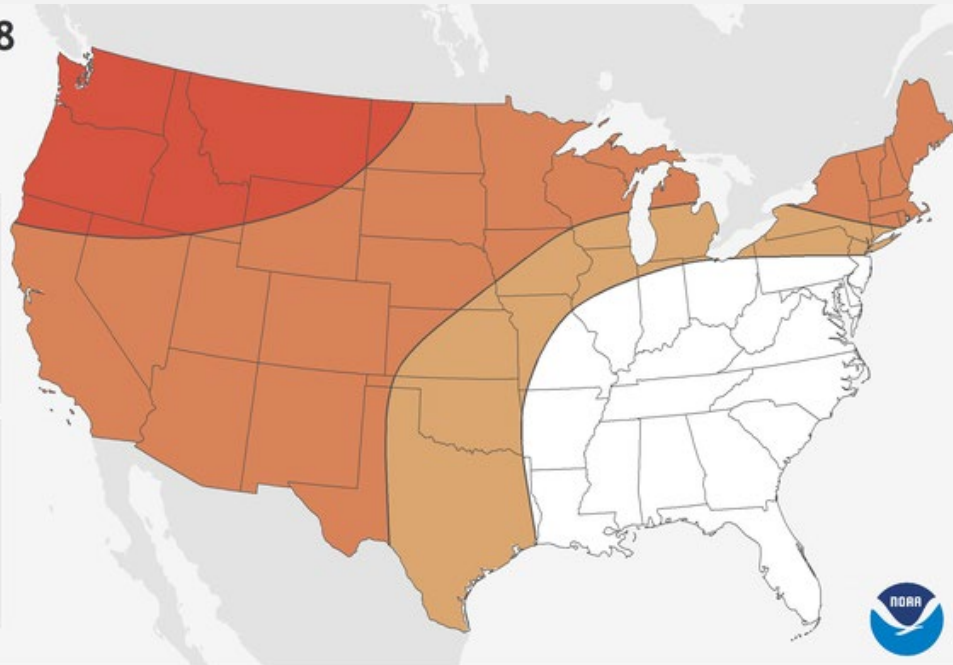
Outlook: winter

Winter 2018

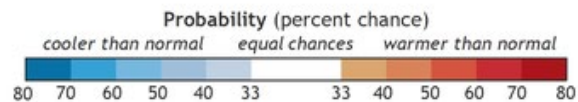
U.S. Temperature Outlook



AK and HI not to scale



Temperature Outlook
for Dec 2018 – Feb 2019
Issued 18 October 2018



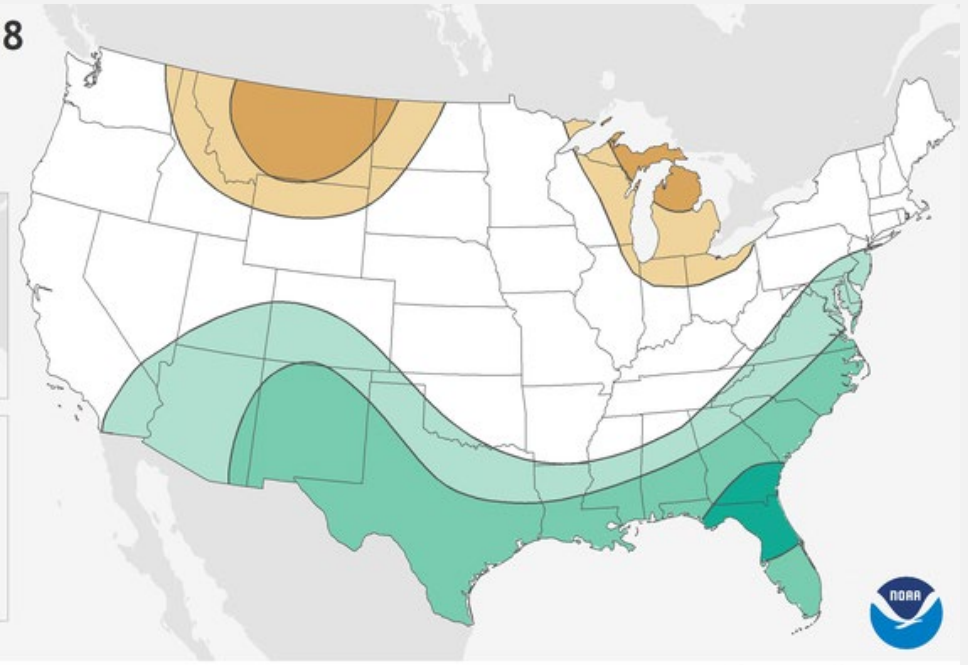
NWS Climate Prediction Center
Map by NOAA Climate.gov

Winter 2018

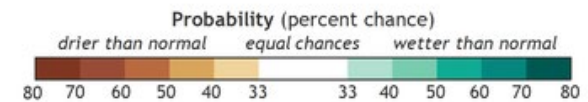
U.S. Precipitation Outlook



AK and HI not to scale



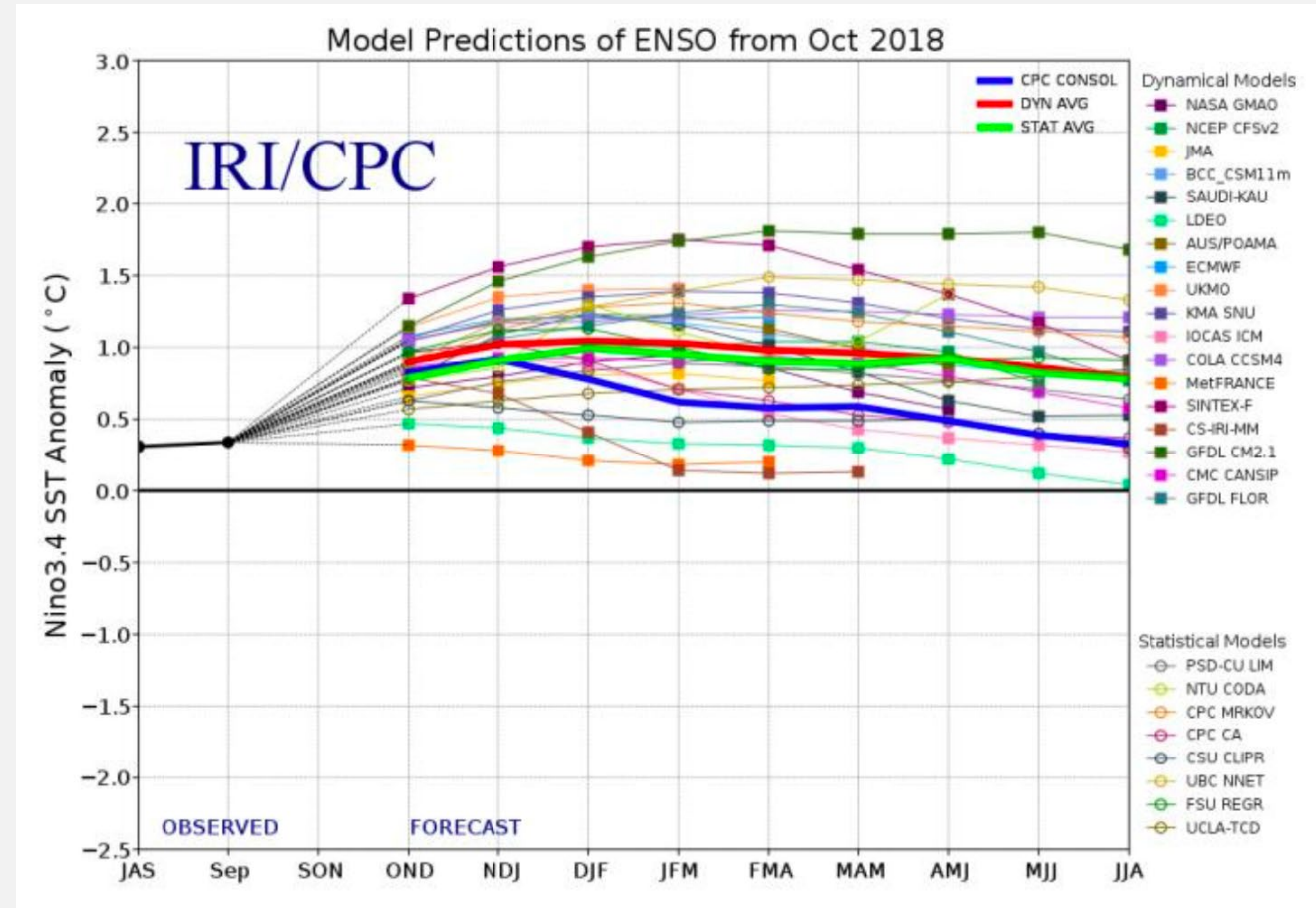
Precipitation Outlook
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NWS Climate Prediction Center
Map by NOAA Climate.gov

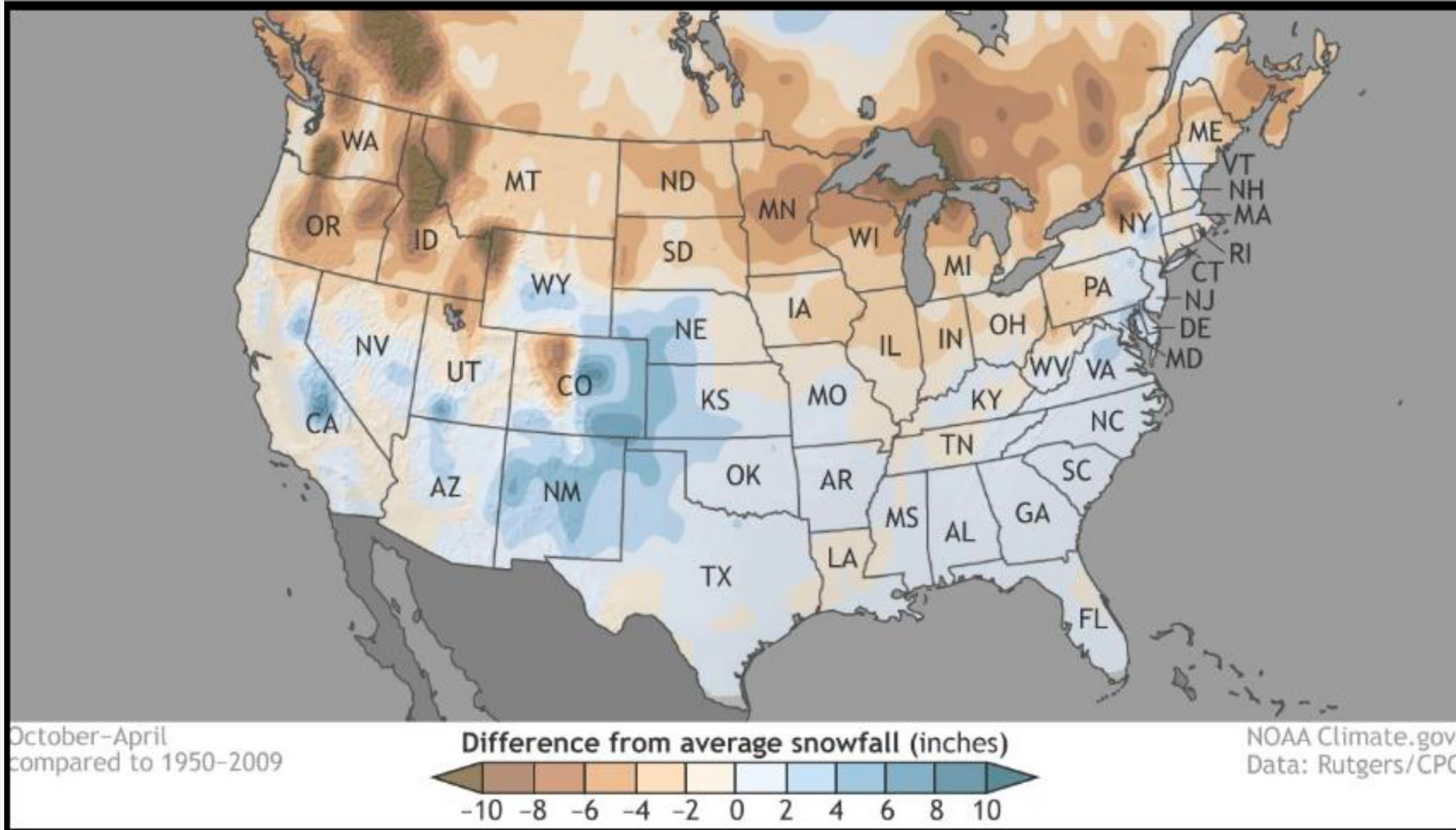
Outlook: El Nino Watch

- Neutral conditions currently.
- Warmth seen in the ocean but atmospheric response isn't realized.
- 85% chance of El Nino to develop.
- Weak event persisting through spring.
- Classic El Nino trends can be heavily impacted by other patterns.



Outlook: Snowfall trend during El Nino

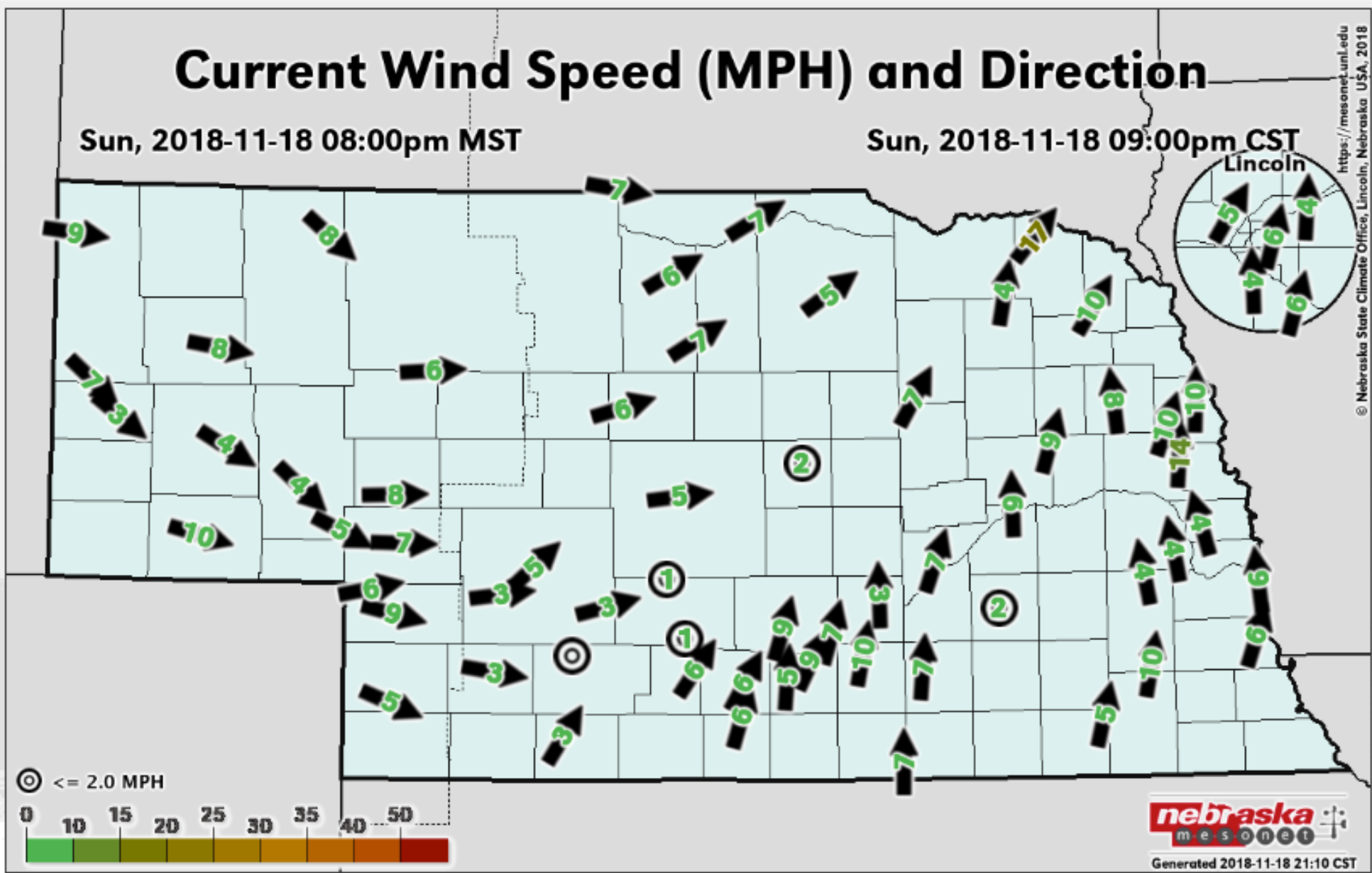
Snowfall deviation map from past El Niño winters



- No single El Nino is alike.
- Average over all events (weak and strong) shows split trend across Nebraska.

Weather resources

mesonet.unl.edu



Wind Speed & Direction ▾

Fordyce 4N (AKA Chalkrock)

Valid time	2018-11-18 21:00 CST
Latitude	42.75°
Longitude	-97.35°
Temperature	34°F
Dewpoint	25°F
Relative Humidity	70%
4inch Soil Temperature	31°F
Incoming Solar Radiation	0W/m ²
Wind Speed	17MPH
Wind Gust	24MPH
Wind Direction	SW
Mean Sea Level Pressure	1016mb
Hourly Precipitation	0.00"

Agro-climate resources

cropwatch.unl.edu/hailknow



1 The Hail Storm >

2 Assess My Damage >

3 Handle My Insurance >

4 Replant My Crop >

5 Manage My Recovering Crop >

6 Are Cover Crops For Me? >

Climate Resources

- Monthly climate summary for Nebraska.

nsco.unl.edu

October 2018

CLIMATE UPDATE

A MONTHLY SUMMARY FROM THE NEBRASKA STATE CLIMATE OFFICE

nsco.unl.edu

Season-ending freeze, snow highlight October

We started October quite warm with some daily high temperatures tied or broken. Grand Island and Hastings airports both reached 94°F on the afternoon of Oct. 3, which were records for that date. The high for the month was 96°F Oct. 3, observed at the McCook Airport. But, thanks to a cold front, temperatures promptly took a dive for the next few weeks. In fact, Grand Island and Hastings airports both reported record low daily high temperatures just one day after their record highs on Oct. 4 at 45°F and 47°F respectively. Temperatures remained below normal until the second half of the month with a return to relative warmth.

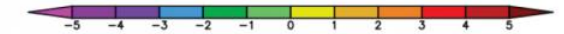
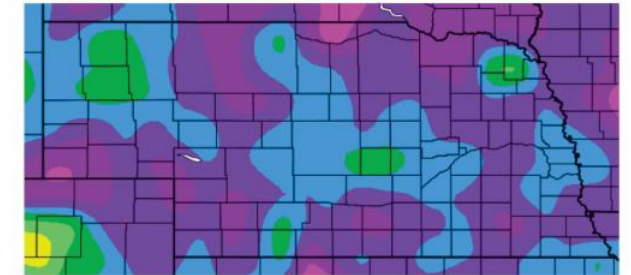
Season-ending freezes occurred statewide around mid-October, which is in line with the median date. More record cold weather returned as daily low temperature records were set for Alliance (6°F on Oct. 14), Grand Island AP (23°F on Oct. 15), Hastings AP (25°F on Oct. 15), North Platte (12°F on Oct. 15) and Valentine (13°F on Oct. 15). The lowest observed temperature was 3°F, recorded at both Agate and Harrison.

For the month overall, temperatures across Nebraska were a few degrees below normal. The average temperature was 47.1°F, which was 3.2°F below average, and ranks as 17th coldest since 1895. Nebraska was near the southern flank of a relative cool spot for the contiguous U.S. as the strongest temperature departures were found in the Dakotas and Minnesota, both of which were 5°F below average and colder. Temperatures for the West Coast, portions of the Intermountain West, and the eastern third of the U.S. averaged above normal for the month.

Precipitation

Along with the cold experienced around mid-month was relatively heavy, wet snow. Five inches fell in and around the capitol

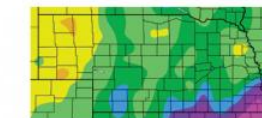
DEPARTURE FROM NORMAL TEMPERATURE (F)



HIGH PLAINS REGIONAL CLIMATE CENTER

All maps generated using October provisional data.

DEPARTURE FROM NORMAL PRECIPITATION (IN)



HIGH PLAINS REGIONAL CLIMATE CENTER

city and a handful of daily snowfall records were observed on Oct. 14: 1.4 inches at Omaha AP, 3.5 inches at Lincoln AP, 1.5 inches at Grand Island AP, 1.1 inches at Hastings AP, and 3 inches at Valentine. Several pockets in southeast Nebraska had more than 6 inches for this event. Many locations around Nebraska reported snow during the month, trace amounts to nearly 10 inches total near Chadron. With a relative warm-up that followed, the snow did not stick around long.

October extremes

Nebraska's statewide weather network operated by the Nebraska Mesonet at the University of Nebraska-Lincoln cataloged the following extremes this October:

Highest air temperature: 94°F on Oct. 3 at Shelton 2SW

Lowest air temperature: 4°F on Oct. 15 at Scottsbluff 2NW

Highest 4-inch bare soil temperature: 80°F on Oct. 3 at Central City 3W

Lowest 4-inch bare soil temperature: 33°F on Oct. 15 at Oshkosh 6N

Highest wind gust: 52 mph on Oct. 3 at Naper 12SW

Highest precipitation: 2.21 inches on Oct. 10 at Guide Rock 3E



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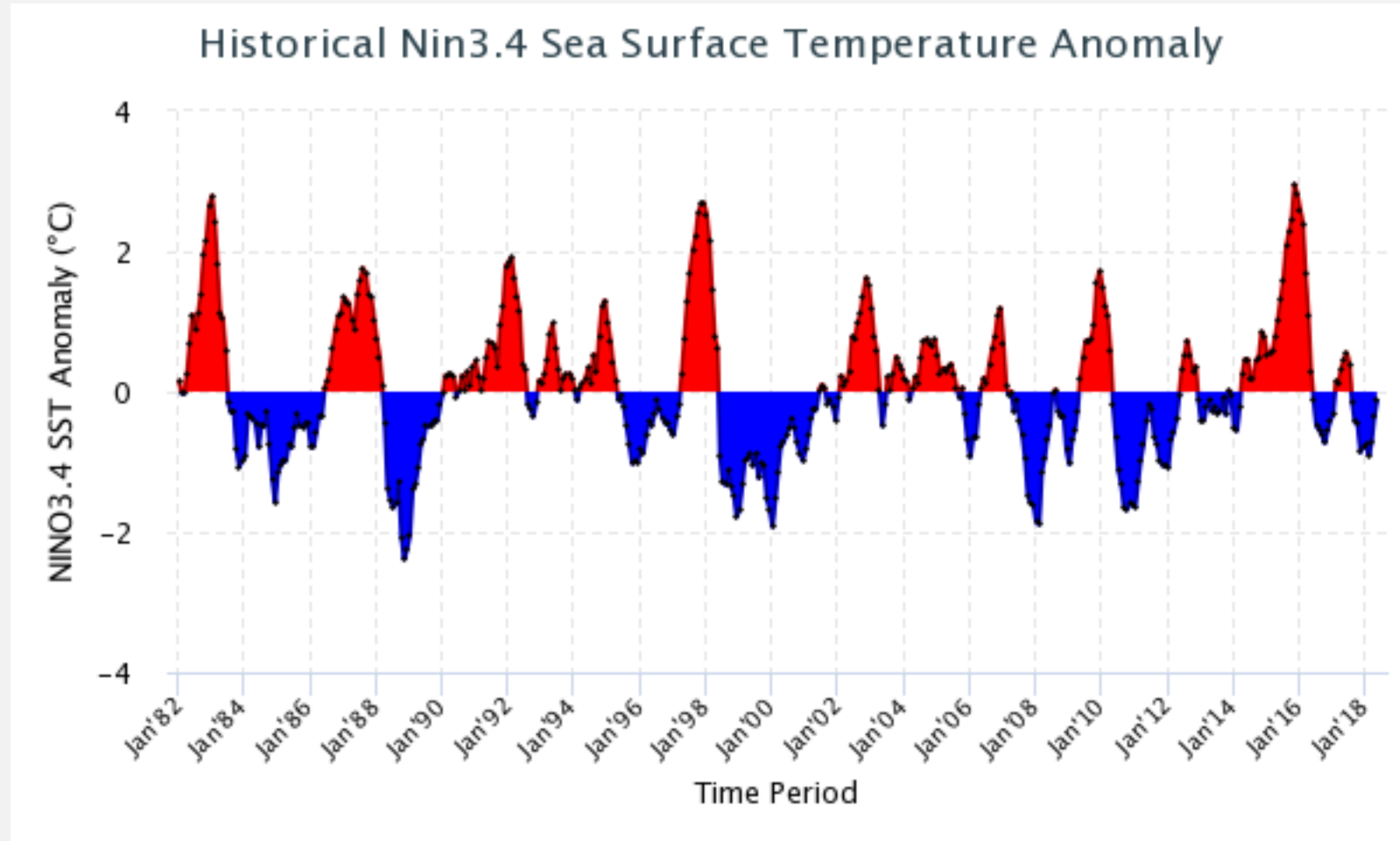
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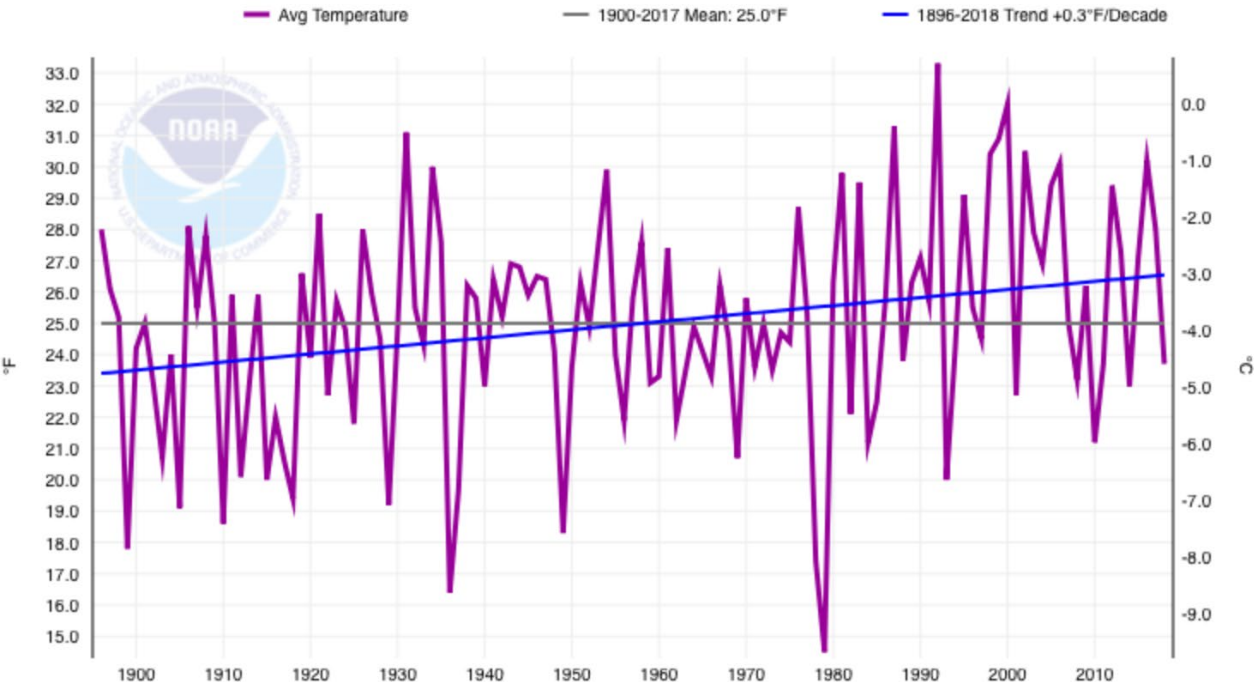


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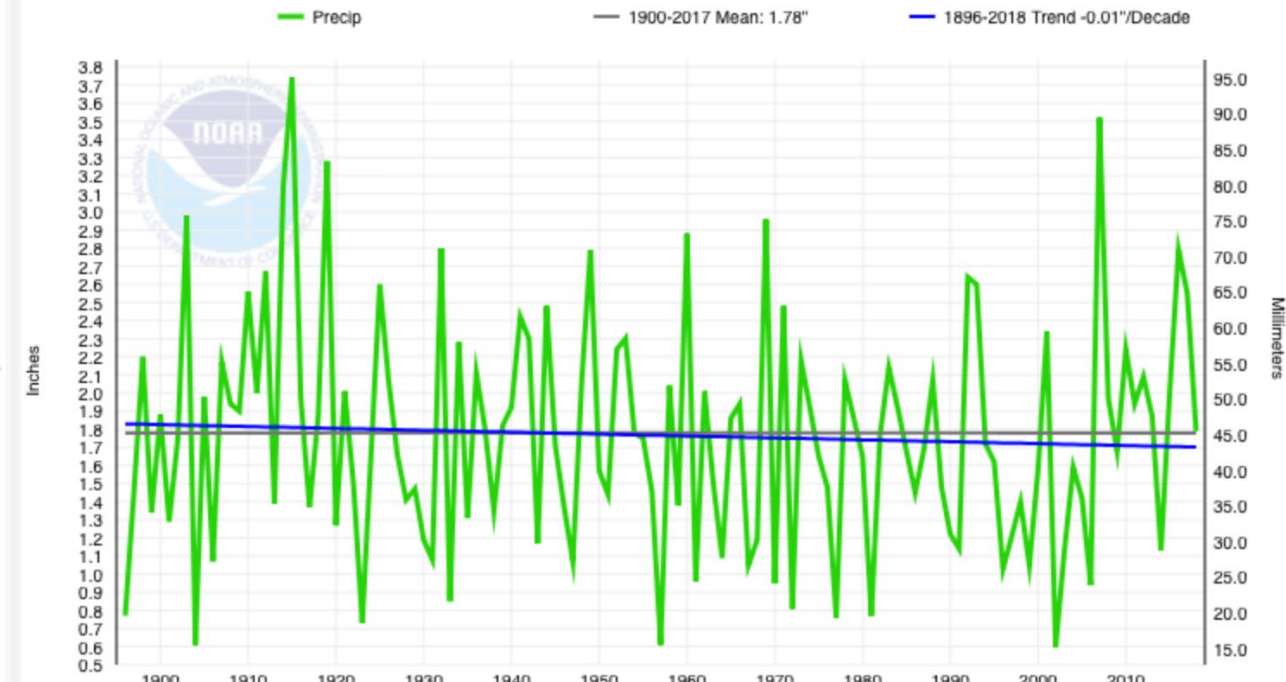


Nebraska Winter Trends

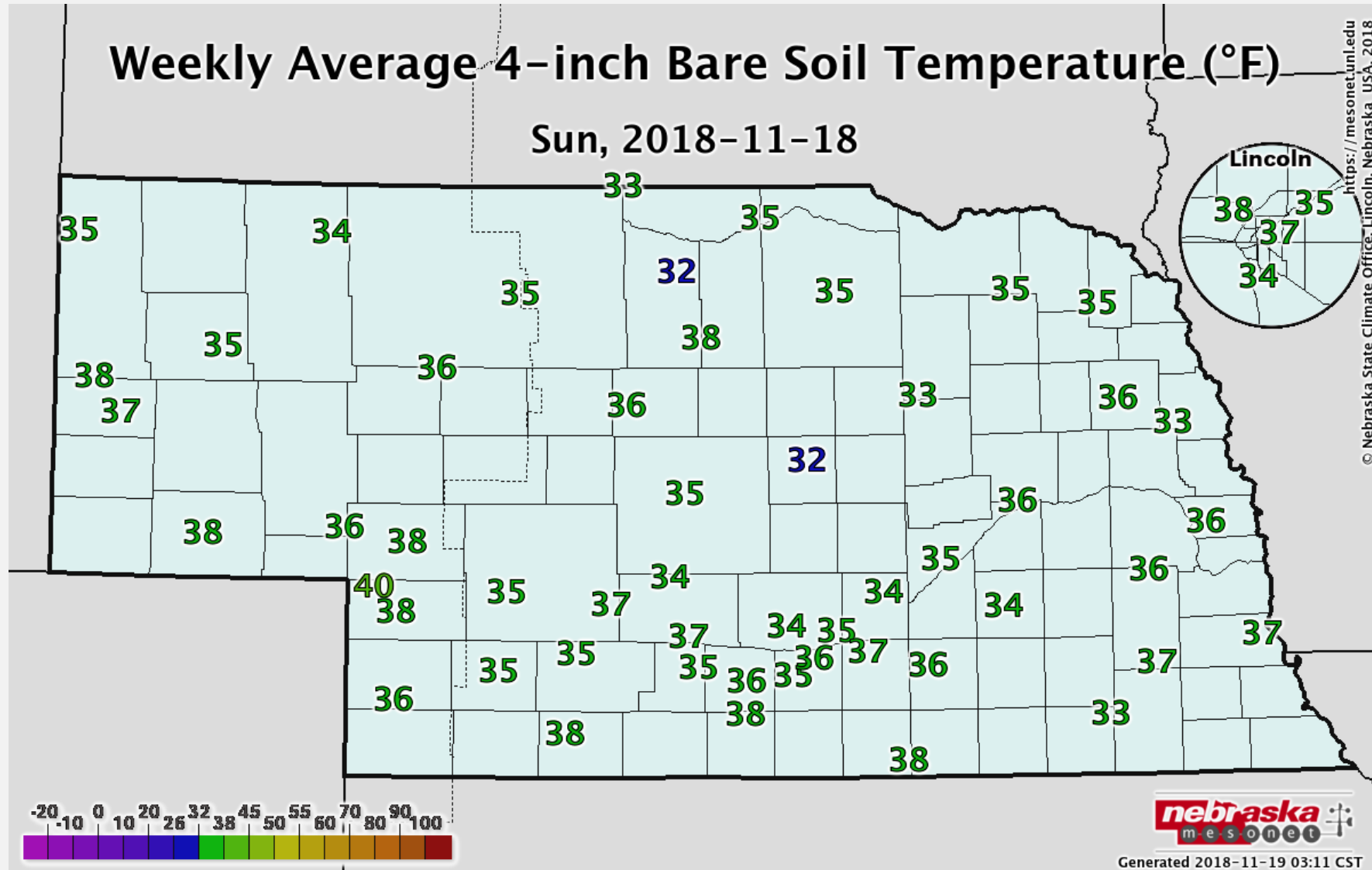
Nebraska, Average Temperature, December-February



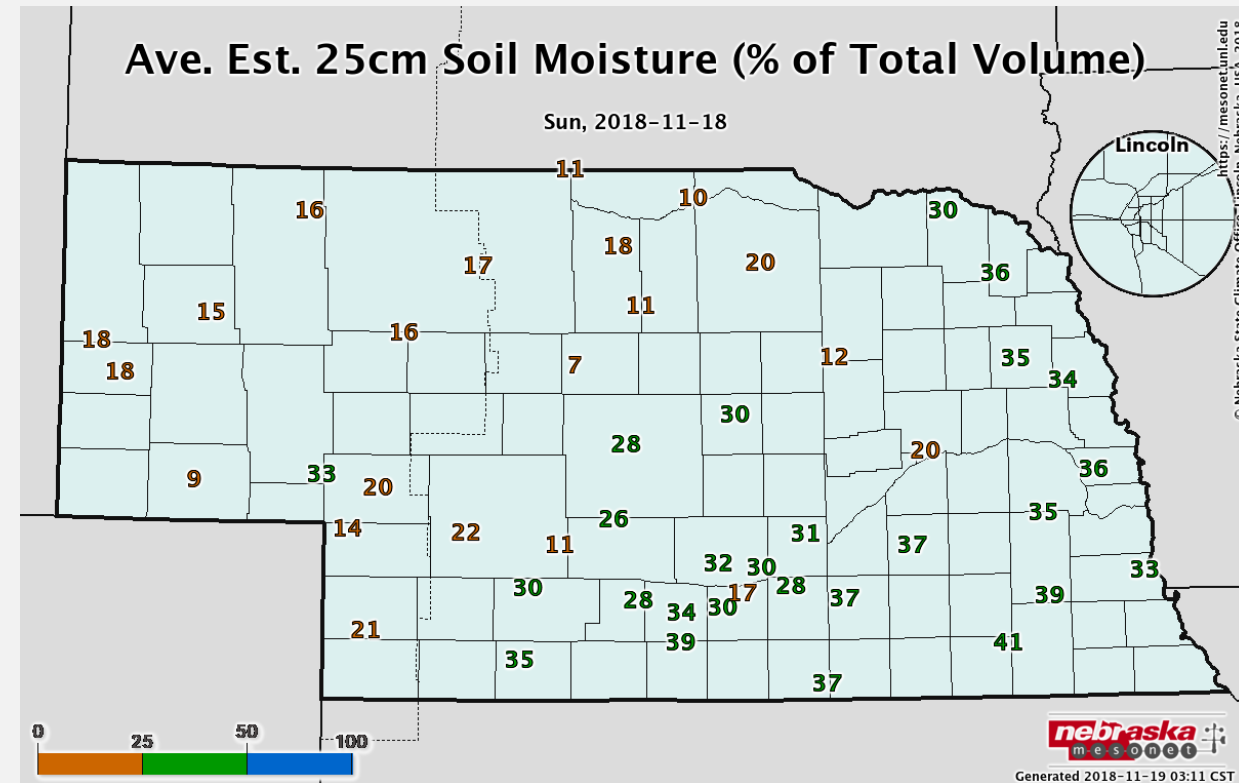
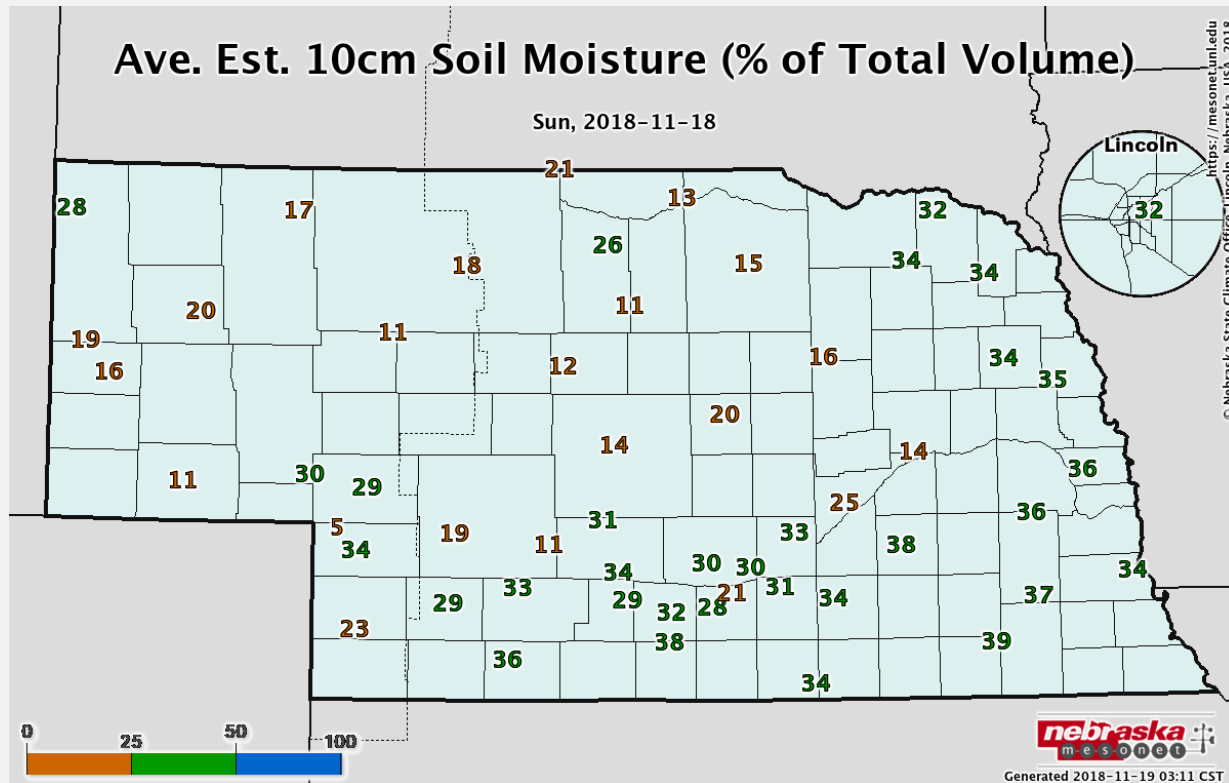
Nebraska, Precipitation, December-February



Nebraska Soil Temperature



Nebraska Soil Moisture



Nebraska Soil Moisture

