



August 2023 Climate Information

Average Max Temperature

Site	Avg. Max	Normal	Departure
Goodland, KS	89.4	87.5	+1.9
Hill City, KS	94.2	90.0	+4.2
Burlington, CO	89.0	86.9	+2.1
McCook, NE	91.0	88.6	+2.4

Average Min Temperature

Site	Avg. Min	Normal	Departure
Goodland, KS	60.5	59.8	+1.9
Hill City, KS	64.4	63.6	+0.8
Burlington, CO	59.1	59.3	-0.2
McCook, NE	61.5	61.7	-0.2

Overall Mean Temperature

Site	Mean	Normal	Departure
Goodland, KS	74.9	73.6	+1.3
Hill City, KS	79.3	76.8	+2.5
Burlington, CO	74.0	73.1	+0.9
McCook, NE	76.3	75.2	+1.1

Precipitation

Site	Observed	Normal	Departure
Goodland, KS	3.58	3.06	+0.52
Hill City, KS	3.19	2.95	+0.24
Burlington, CO	1.26	3.05	-1.79
McCook, NE	3.68	3.13	+0.55

Records

Records wise across the area, August 2023 was rather interesting. August 14th saw a strong cold front for mid August standards move across the area. As some locations fell into the 40s and low 50s; McCook set their record low of 50 degrees which broke their previous record of 51 degrees in 2004.

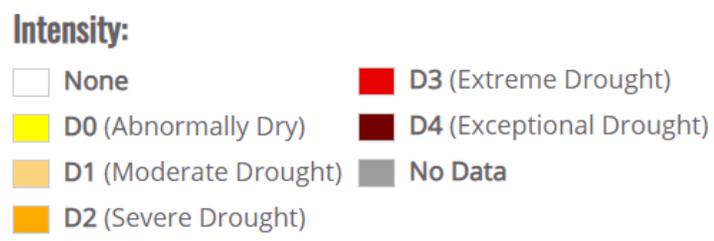
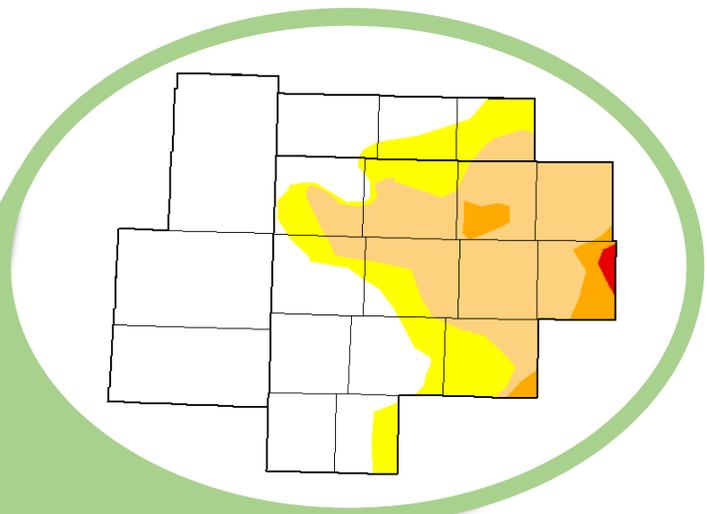
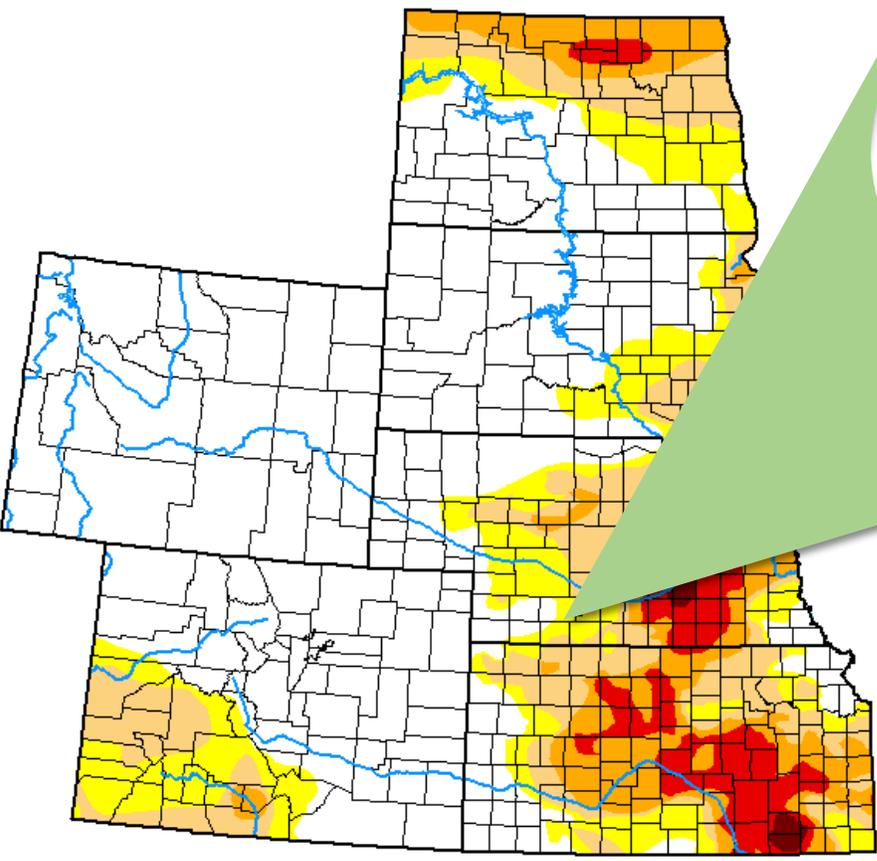
A few days later multiple record highs were set as a strong high pressure system set up across the area. KMCK and KHLC each saw multiple days with air temperatures over 105 degrees along with heat indices ranging from 105-110+.



Drought Monitor for the High Plains

U.S. Drought Monitor
High Plains

U.S. Drought Monitor
Goodland, KS WFO



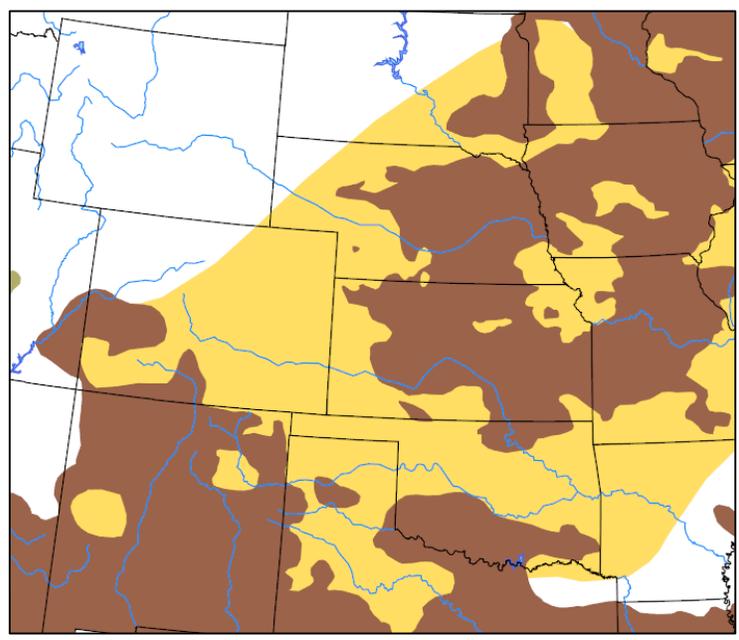
Discussion:

The majority of the area saw drought continue to improve over the past month. However, this recent dry and hot spell is starting to have an impact on the progress that has been made. A bit more detail will go into that on the next slide.



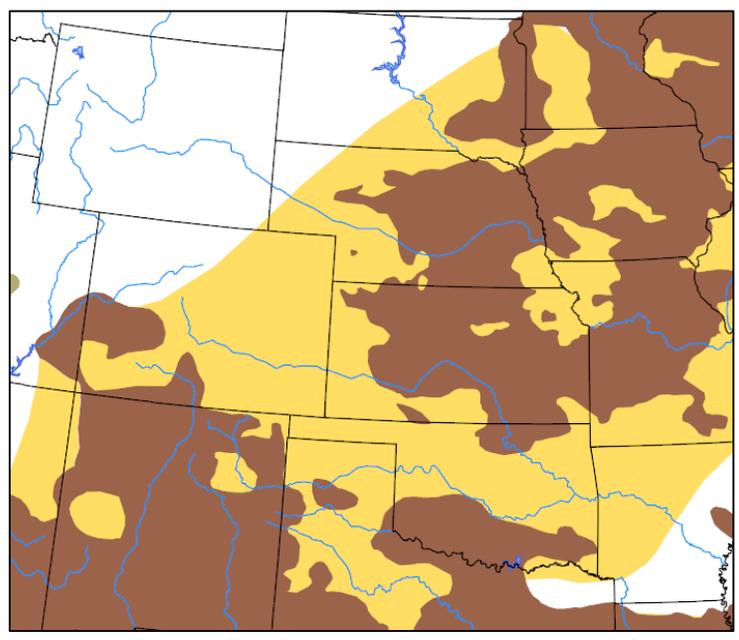
Drought Outlooks

U.S. Monthly Drought Outlook Drought Tendency During the Valid Period



*Valid for September 2023
Released August 31, 2023*

U.S. Seasonal Drought Outlook Drought Tendency During the Valid Period



*Valid for September 1 - November 30, 2023
Released August 31, 2023*

Consistent adjustment

-  Drought remains, but improves
-  Drought development likely
-  No drought

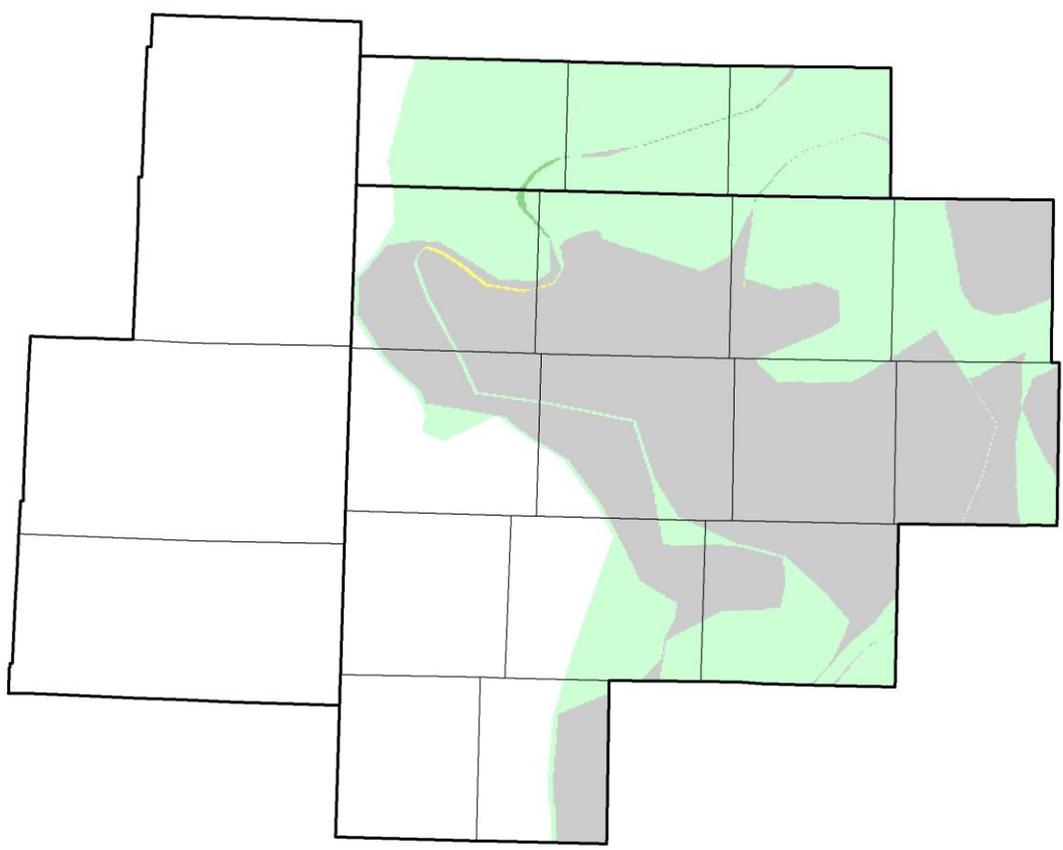
Discussion:

A persistent hot and dry spell has had its eye set on the central part of the area for the latter part of August and thus far into September. The latest drought outlook has almost all of the area getting added back into drought and/or remaining in drought. This doesn't mean that it will be dry all the way through November as El Nino remains which favors above normal precipitation and below normal temperatures through the fall. The fall is typically when we do start seeing an overall drop off of precipitation and increasing wind.



Drought Monitor Change Over the Past Month

U.S. Drought Monitor Class Change - Goodland, KS WFO
4 Week



August 29, 2023
compared to
August 1, 2023

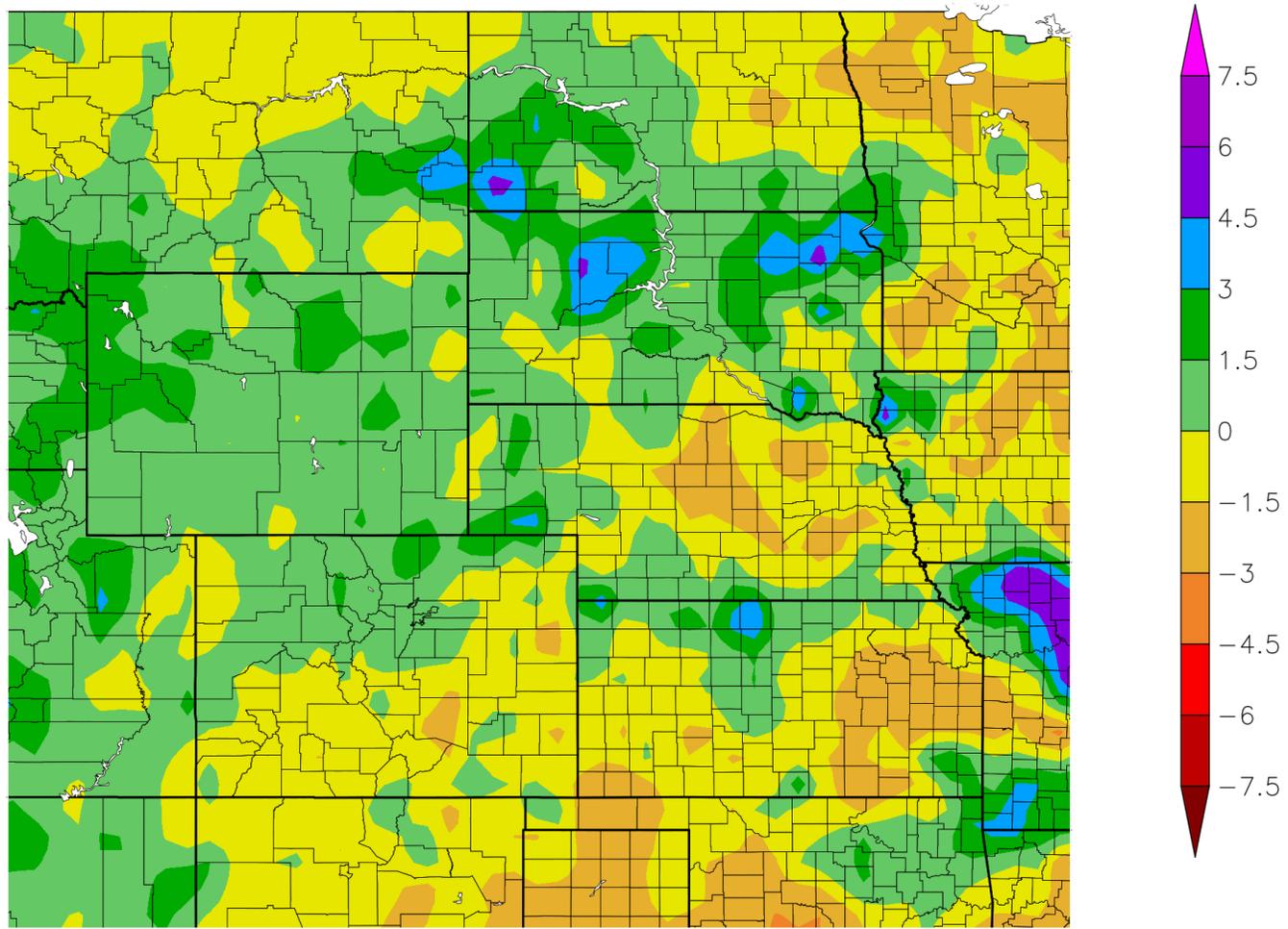
droughtmonitor.unl.edu

- 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



Compared to Normal Precipitation for August 2023

Departure from Normal Precipitation (in)
8/1/2023 – 8/31/2023



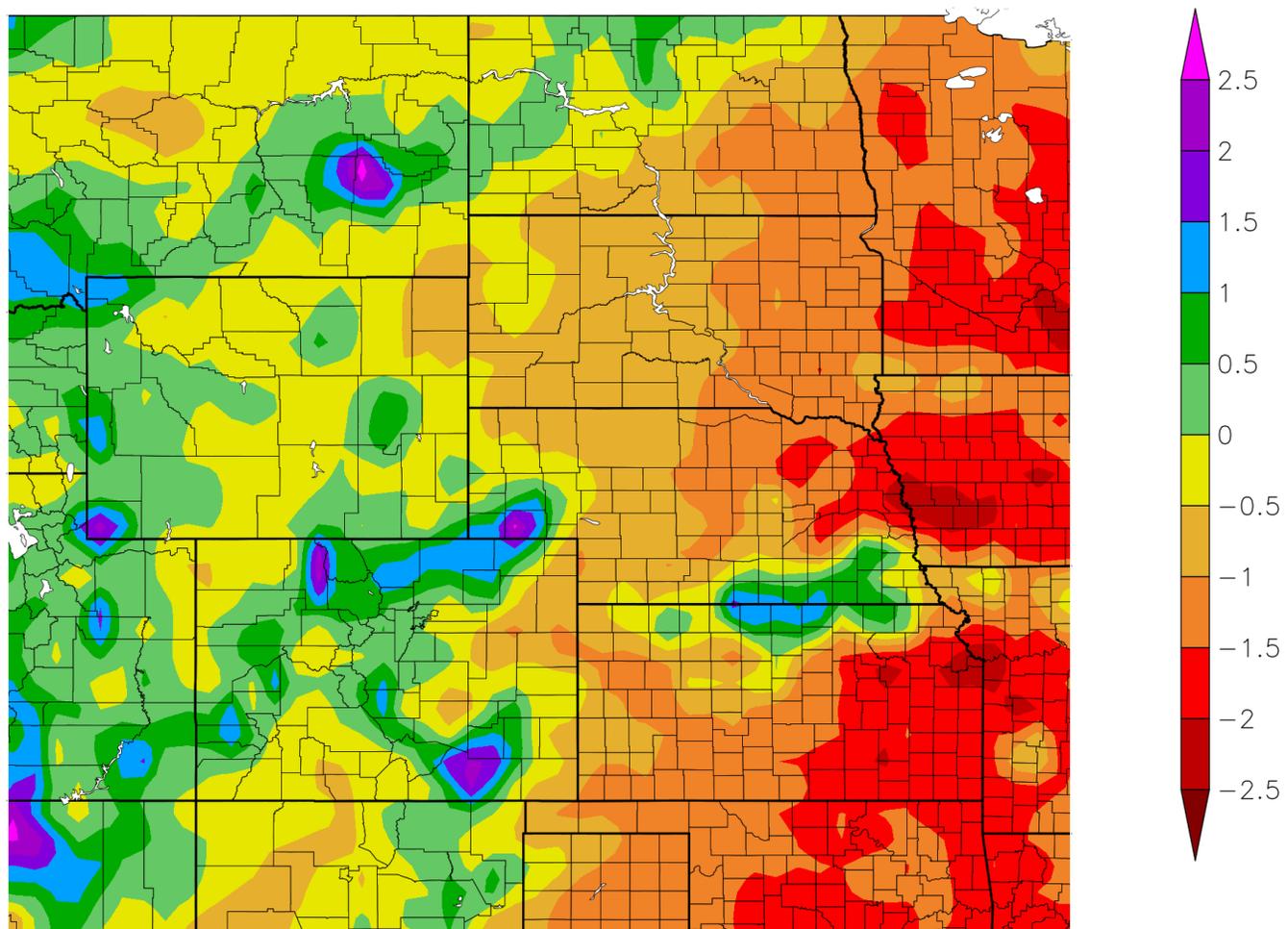
Generated 9/1/2023 at HPRCC using provisional data.

NOAA Regional Climate Centers



Compared to Normal Precipitation for Past 2 Weeks

Departure from Normal Precipitation (in)
8/18/2023 – 8/31/2023



Generated 9/1/2023 at HPRCC using provisional data.

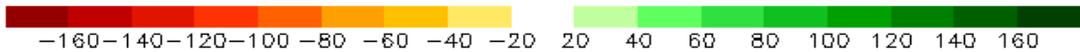
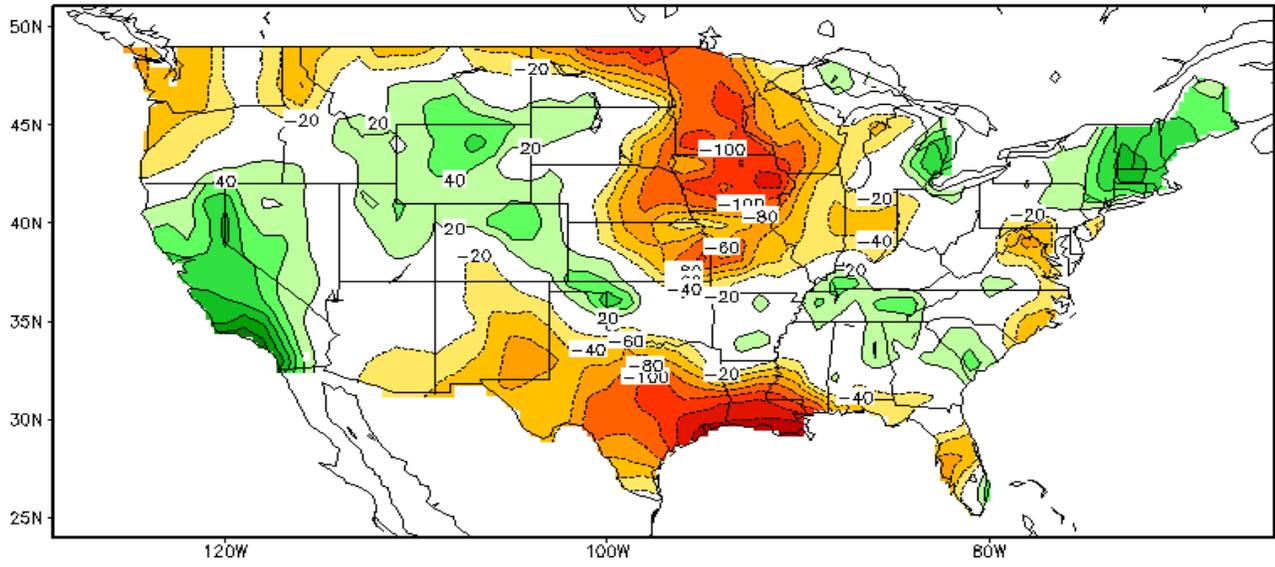
NOAA Regional Climate Centers



Soil Moisture Status

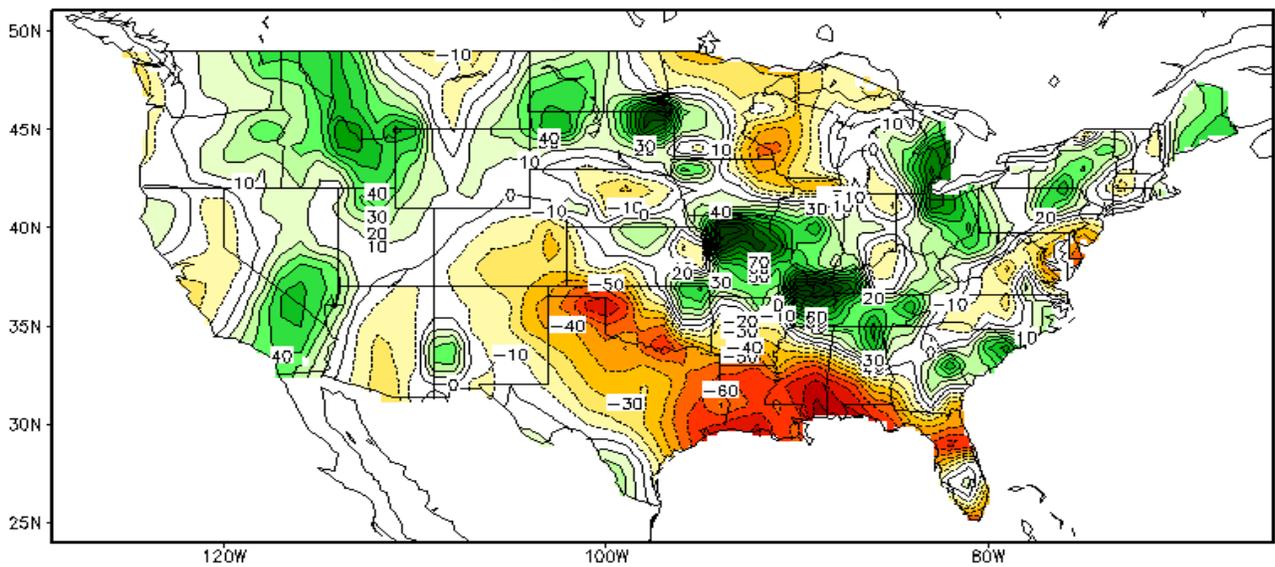
Soil Moisture Difference from Normal

Calculated Soil Moisture Anomaly (mm)
AUG, 2023



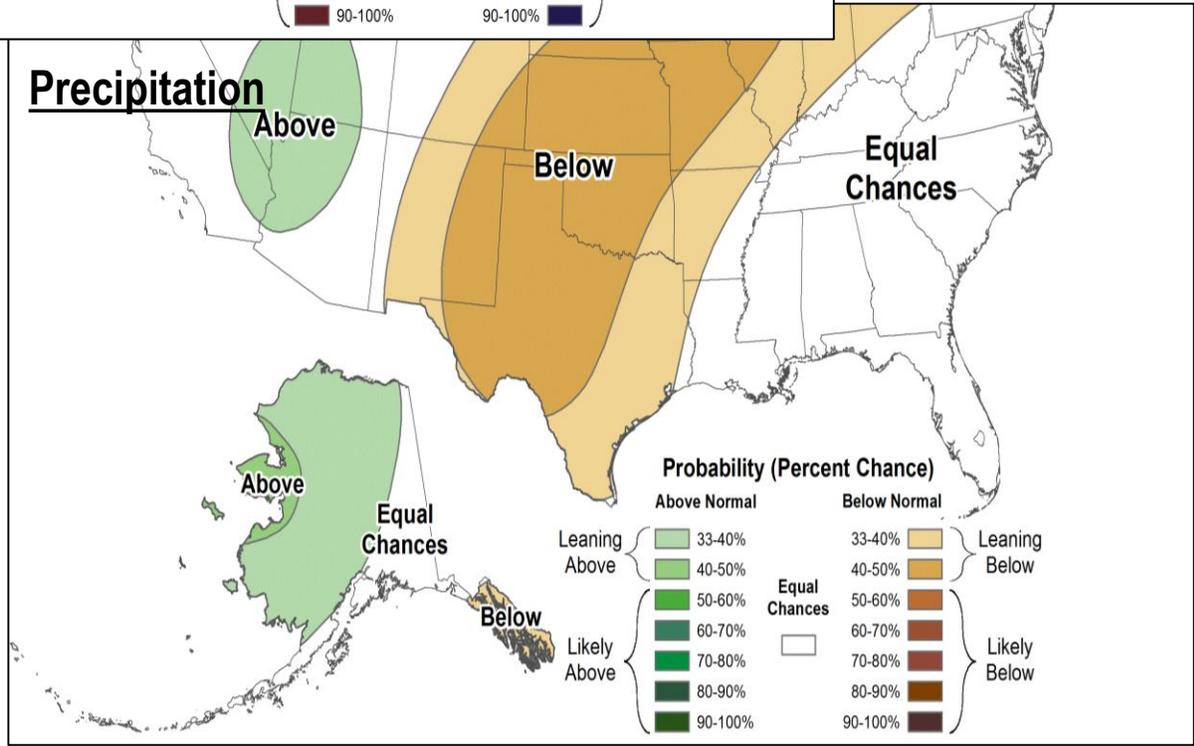
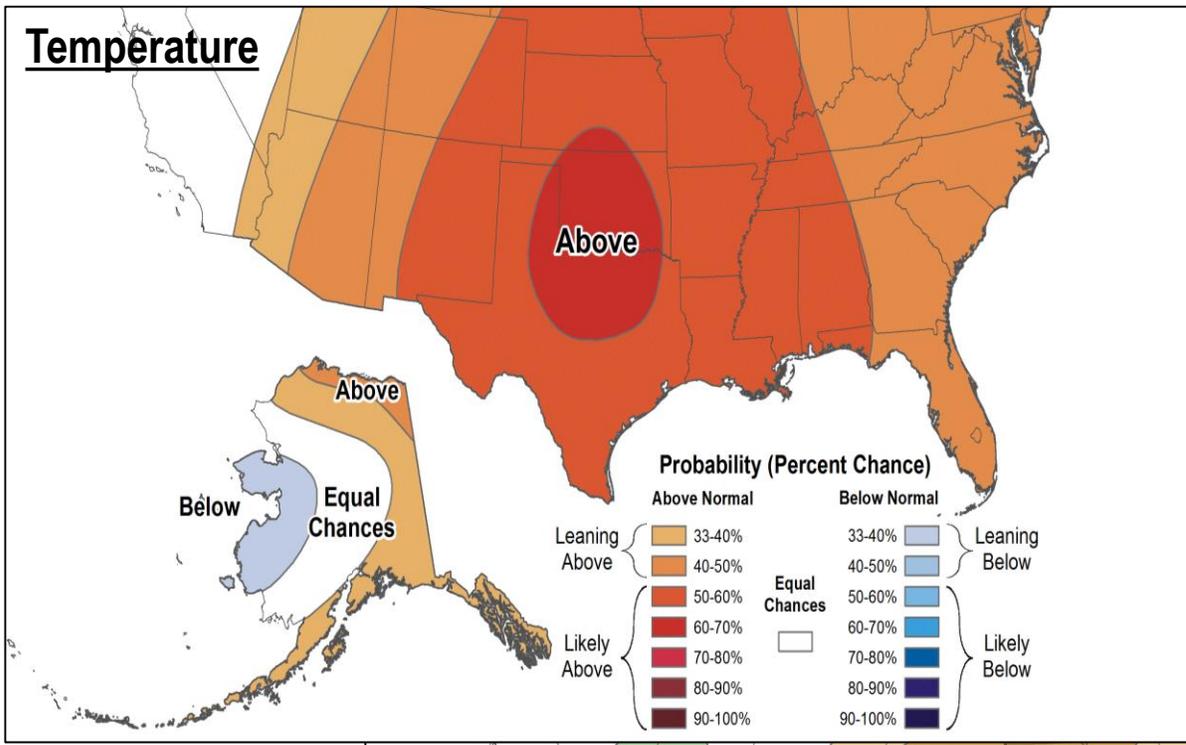
Soil Moisture Change

Calculated Soil Moisture Anomaly Change
AUG 31, 2023 from JUL.31





1 Month Outlooks

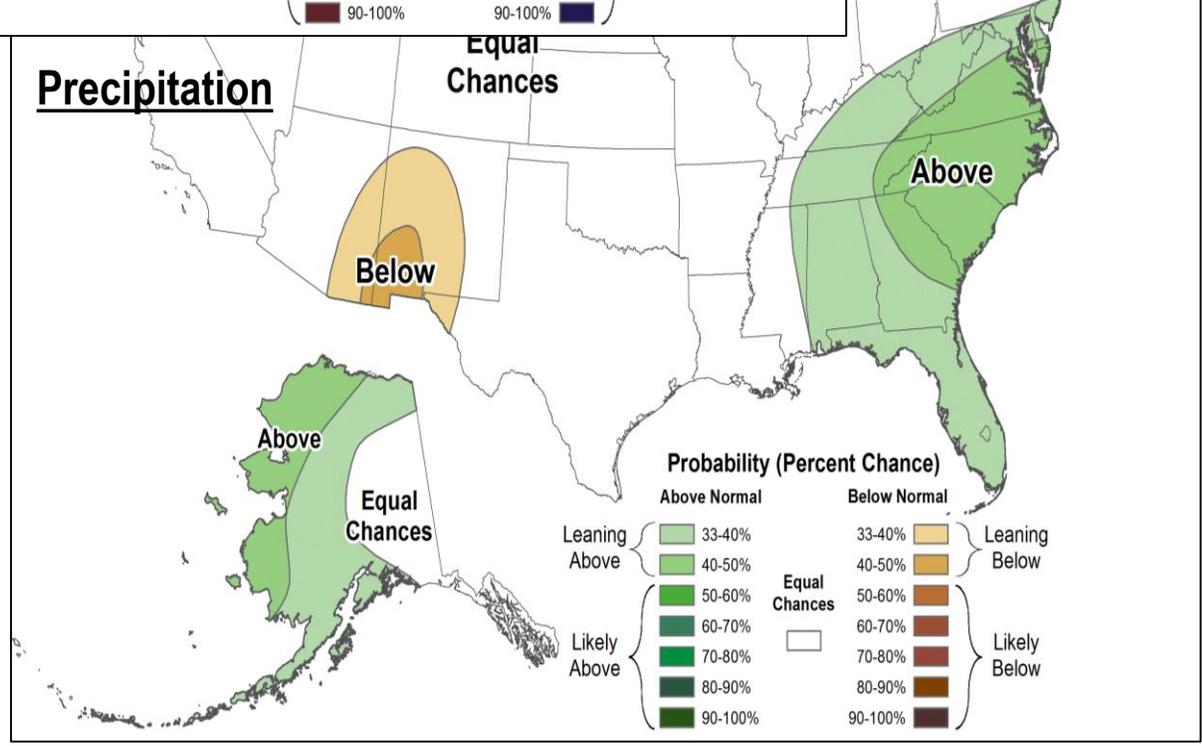
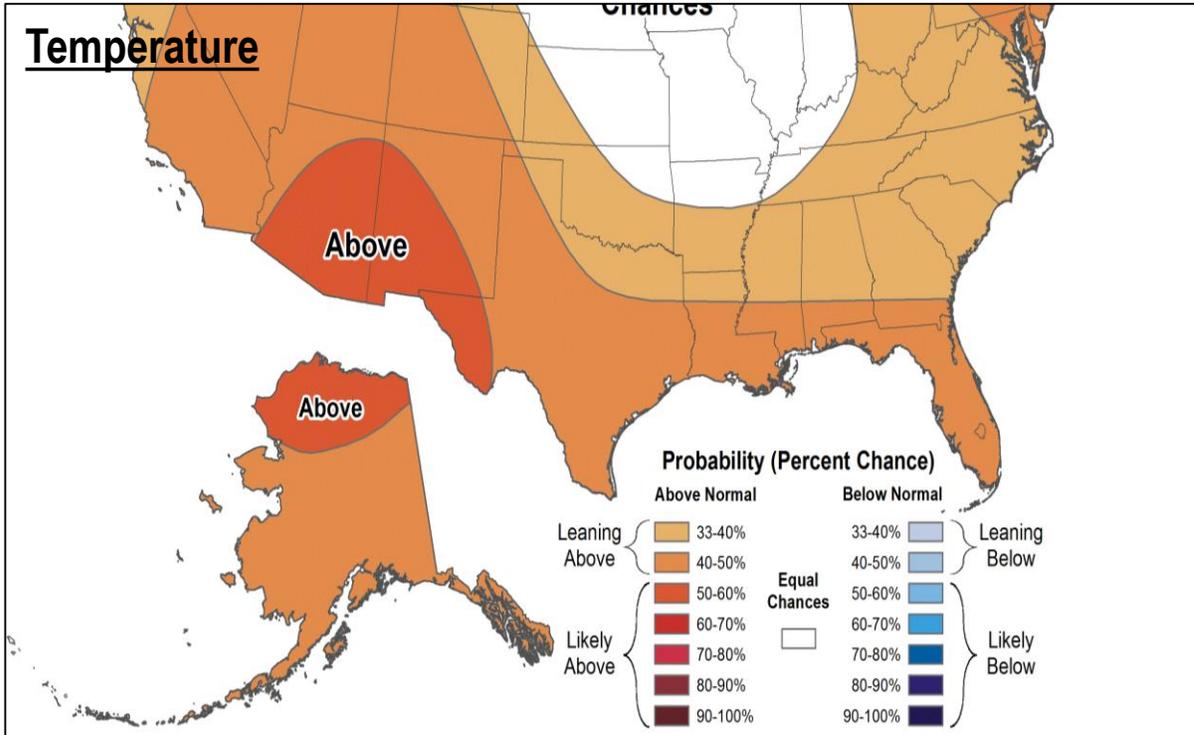


Discussion:

The month of September outlook currently favors above normal temperatures and below normal precipitation. However, the 8-14 day outlook does favor above normal precipitation across the area with perhaps an uptick in precipitation chances towards the end of the month.



3 Month Outlooks



Discussion:

The signal for this coming fall is currently favoring near normal to above normal temperatures and normal precipitation.



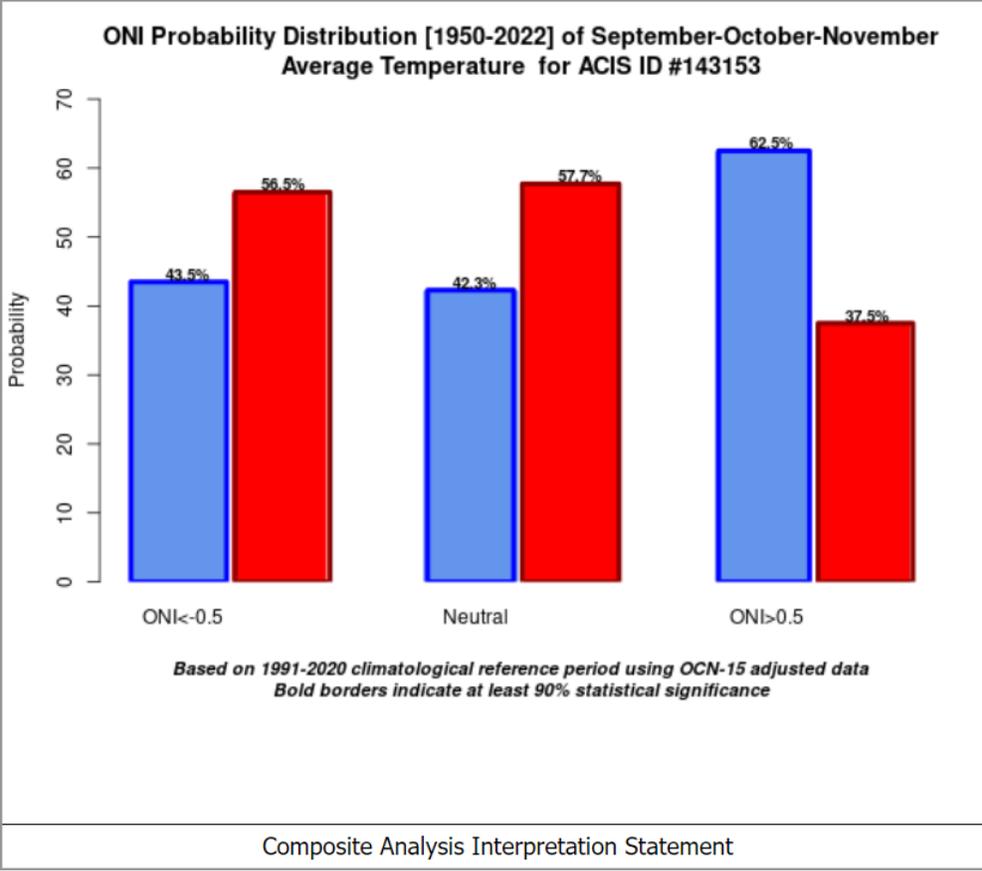
Fall and Winter 2023 Outlook

On August 10th, the Climate Prediction Center announced that there is a 95% chance for El Nino to continue throughout the Winter. Long term forecasters are also gaining confidence that perhaps a “Strong El Nino” event may occur.

So what does all of this mean for the Tri-State area?



El Nino and Fall

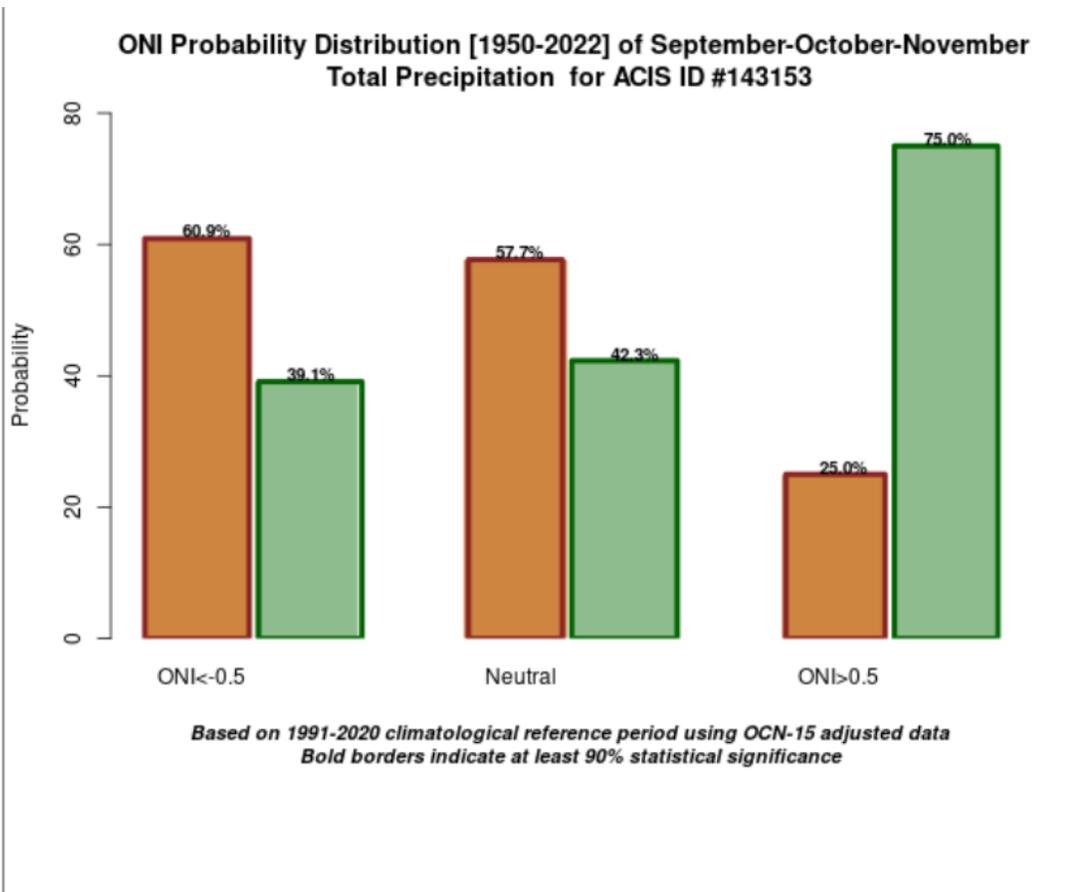


El Nino is classified as ONI > 0.5 and La Nina as ONI < -0.5

The image to the left shows that a typical El Nino supports below normal temperatures for the fall months. (Sept, Oct, Nov). The image below supports a typical El Nino with above normal precipitation.

It is worth noting that these graphs show the probability of above or below normal occurrences in temperatures and precipitation.

As the odds are in the favor of below normal temperatures and above normal precipitation.

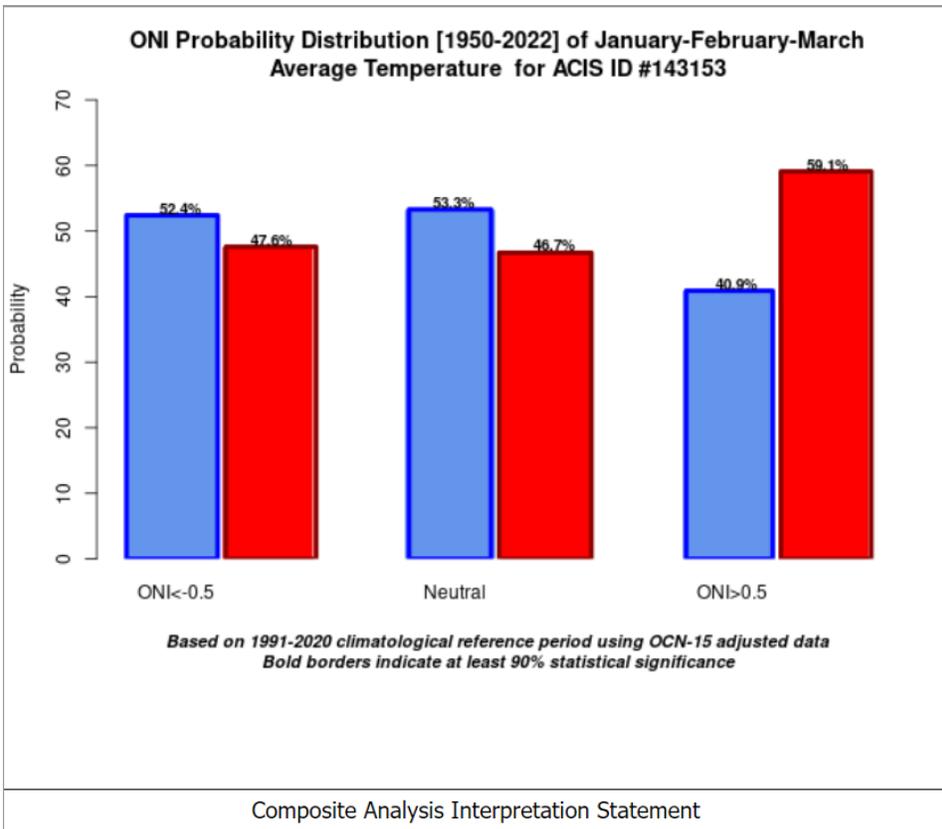




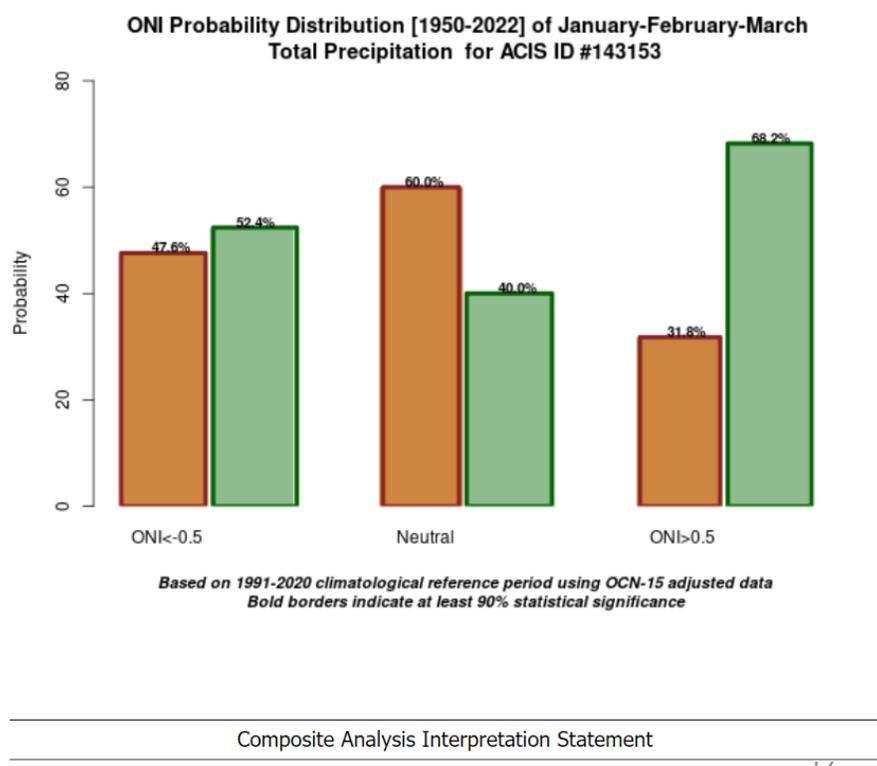
El Nino and Winter

El Nino is classified as ONI > 0.5 and La Nina as ONI < -0.5

The image to the left shows that a typical El Nino supports above normal temperatures for the winter months. (Jan, Feb, March). The image below supports a typical El Nino has above normal precipitation.

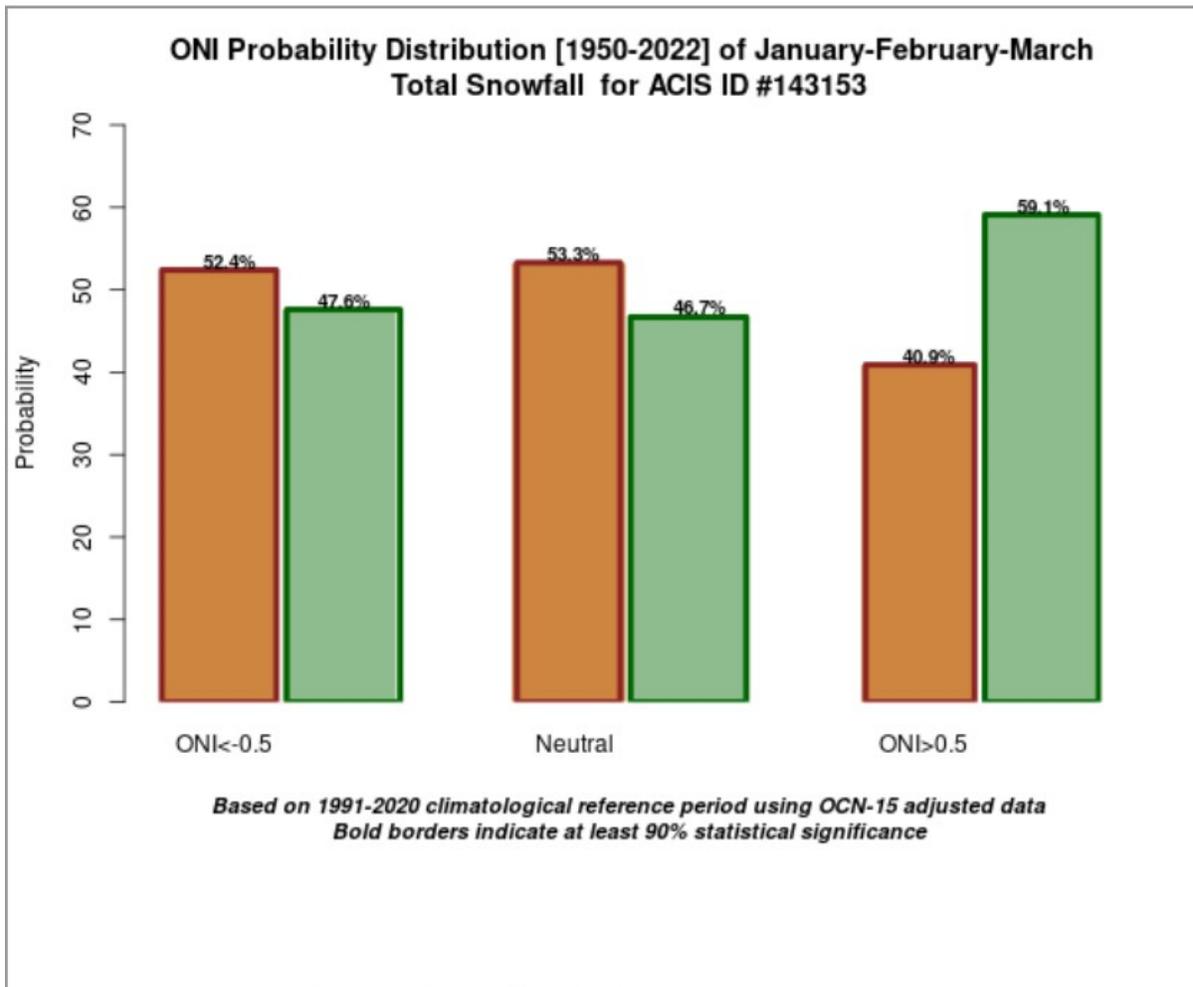


Although the odds of above normal temperatures during the winter are greater during El Nino. El Nino's are notorious for Arctic Outbreaks to occur in the area as it is more susceptible to blasts of frigid Arctic air.





El Nino and Snowfall



Composite Analysis Interpretation Statement

El Nino is classified as ONI > 0.5 and La Nina as ONI < -0.5

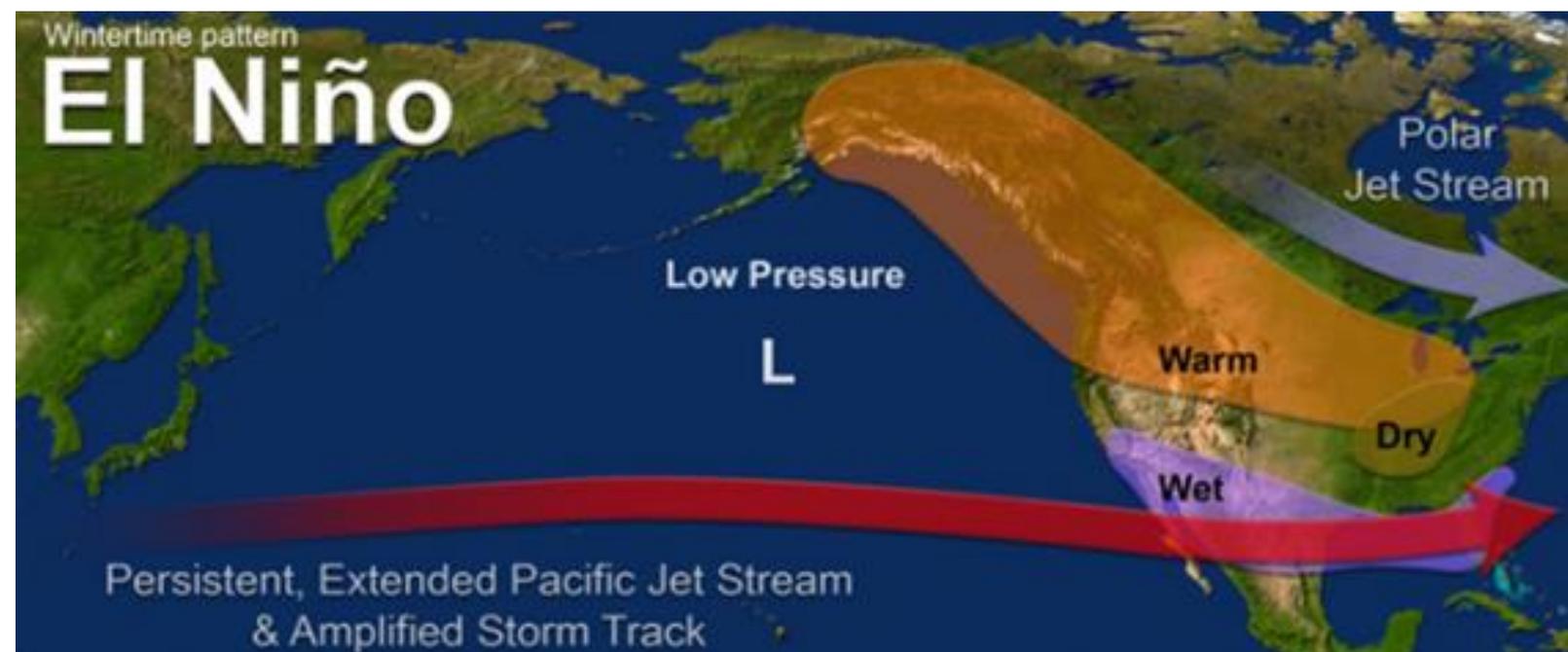
Odds do favor above normal snowfall to occur with El Nino. As mentioned, there is potential for a strong El Nino to occur. Looking back at winters with a strong El Nino (91-92,87-88,72-73,65-66,57-58), about half of those winters did have well above average snowfall occur.



Summary

Overall, the odds do favor above normal precipitation and perhaps snowfall as we head through the fall-winter months. The odds do favor above normal precipitation and below normal temperatures for the fall, so that may come from multiple days of thick clouds with rain/snow. Temperatures for the winter do favor above normal, but with the positioning of the Jet Stream the Plains are more prone to bouts of Arctic Air Outbreaks occurring.

Again, the charts only favor probabilities of occurrence and are not indicative of what will happen as we end 2023 and head into 2024.





Contact Information

A little water can show how little water there is around it.

Show us what it looks like around you



Submit photos to the **Condition Monitoring Observation Report** database.

go.unl.edu/cmor_drought



Web:

www.weather.gov/gld



Phone (public):

785-899-7119



E-mail:

nws.goodland@noaa.gov



Facebook:

facebook.com/NWSGoodland



Twitter:

twitter.com/NWSGoodland



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youtube.com/user/NWSGoodland

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