

# July 2024 Weather Digest



# July 2024 Weather Summary

With the Monsoon season fully in swing (see slides below) by the beginning of July, rainfall began to fall across much of the region. Sierra, Luna, Dona Ana, El Paso and western Otero Counties all received near to above normal rainfall, helping to ease the seasonal drought conditions. Much of Hudspeth, Hidalgo and Grant County lowlands were well below normal. Of course the plentiful rainfall continued to cause problems over fire burn scars near Ruidoso and parts of northern Otero County. The storms, as is typical during the Monsoon season, also brought several storms, strong winds and blowing dust to the Lordsburg Playa area. However toward the end of the month, it appeared enough rain had fallen to moisten the soil and lessen the blowing dust danger.

Despite the consistent clouds and scattered storms, July ended up about 1 to 3 degrees above normal for temperatures. With the summer of 2023 still fresh in many minds, this July, though hotter than normal, wasn't nearly and hot as last summer.

# July 2024 Weather Summary

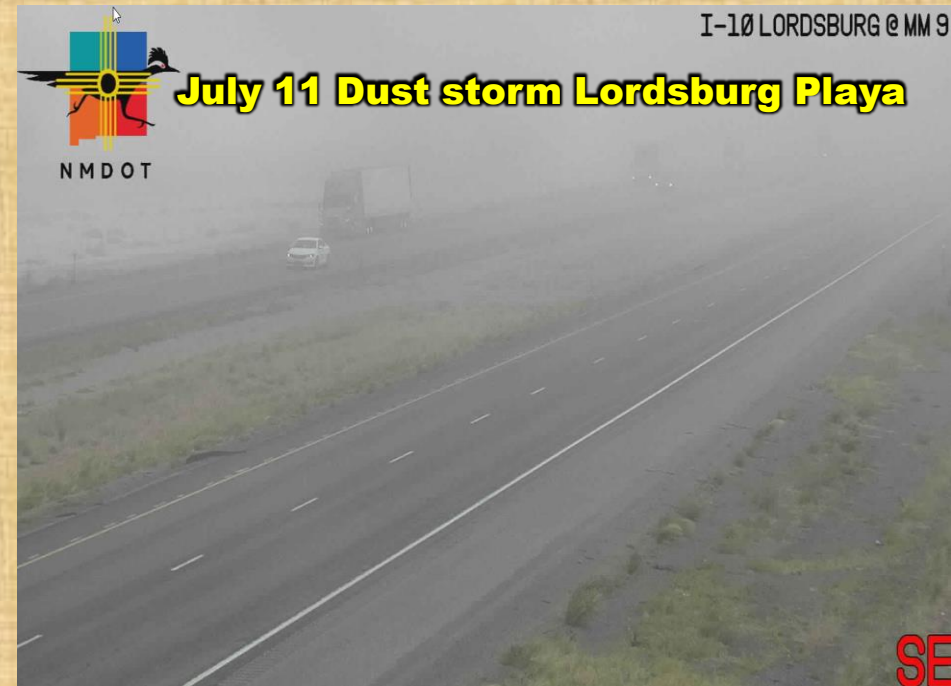
Looking ahead to August, temperatures continue to slowly drop, although higher humidity negates much of the “cooling effect”. At El Paso the average high temperature on August 1 is 95 deg, dropping to 92 deg by the end of the month. While July is usually the wettest month, August comes in a close second as the Monsoon pattern continues.

Daylight continues to shrink too as we progress toward the Autumn Equinox. Daylight on the first is 13 hrs, 40 mins, while on August 31 daylight drops to 12 hrs, 49 mins. The August Full Moon, also known as the Sturgeon Moon, is on the 19<sup>th</sup>, while the New Moon is on the 4<sup>th</sup>.

**July 9 Dust storm El Paso**



**July 9 Dust storm Lordsburg Playa**



**July 11 Dust storm Lordsburg Playa**

I-10 @ STEINSEAST

# July 11 Dust storm Lordsburg Playa



I-10 @ WEST OF LORDSBURG

# July 11 Dust storm Lordsburg Playa



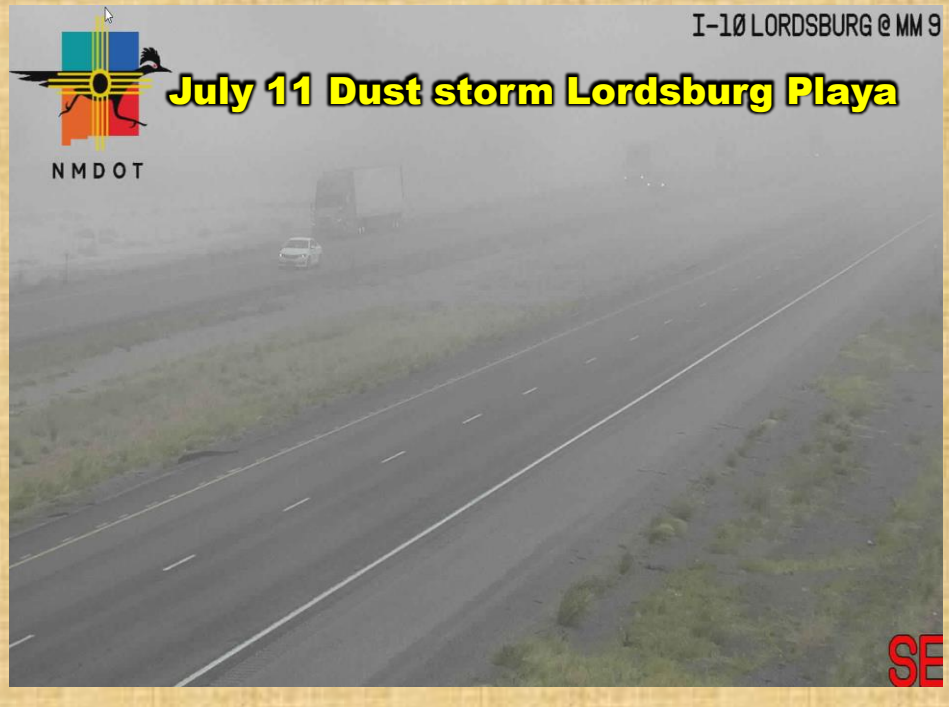
I-10 @ MM 7

# July 11 Dust storm Lordsburg Playa



I-10 LORDSBURG @ MM 9

# July 11 Dust storm Lordsburg Playa



**July 16 near Lordsburg**



**July 18 near Emory Pass**



**July 18 near Emory Pass**



**July 28 Silver City**



**July 26 near Lordsburg**



**July 26 near Lordsburg**



# **ENSO Alert System Status:** **La Niña Watch is in effect**

## **ENSO Alert System**

- **El Niño or La Niña Watch:** Issued when conditions are favorable for the development of El Niño or La Niña conditions in the next six months.
- **El Niño or La Niña Advisory:** Issued when El Niño or La Niña conditions are observed and expected to continue.

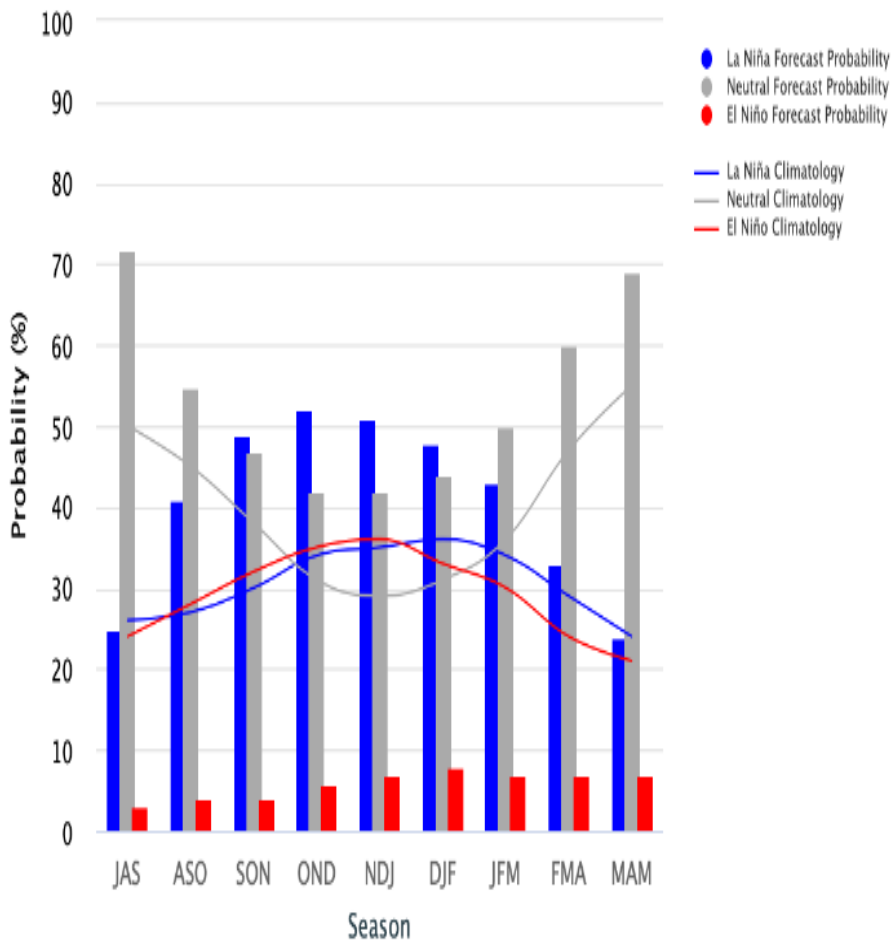


# ENSO Forecast

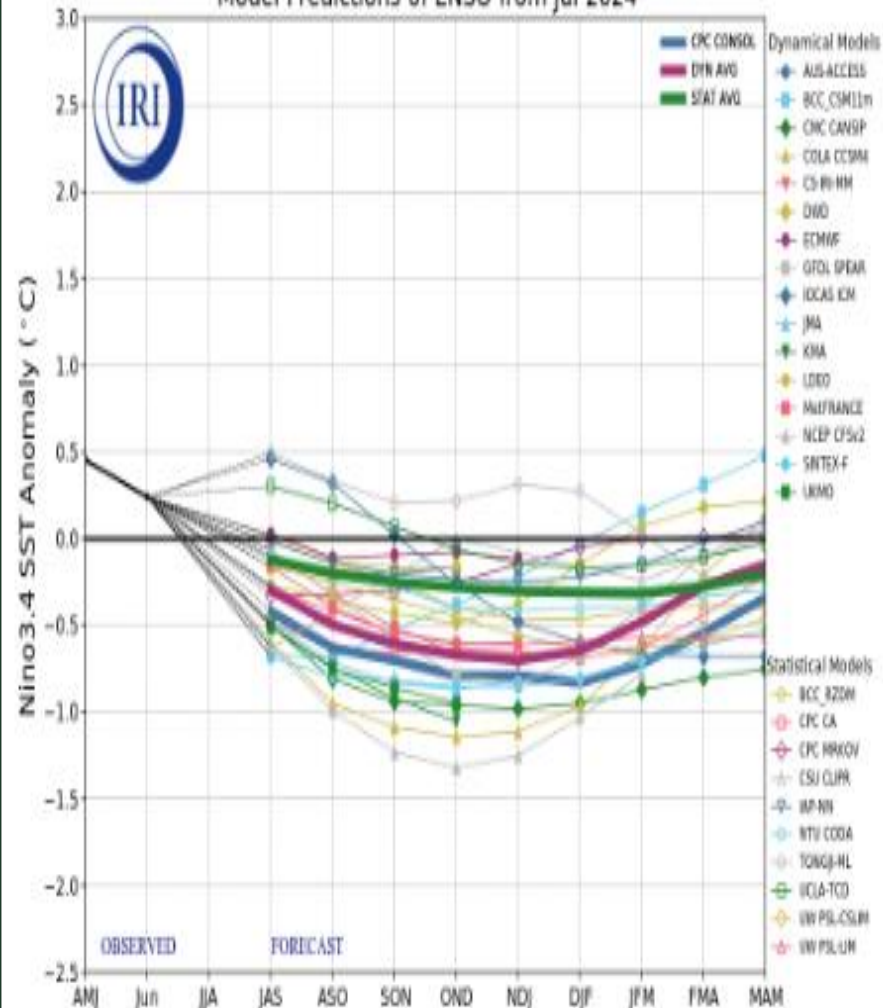
**ENSO is in Neutral phase and is expected to transition to La Niña by early Fall.**

Mid-July 2024 IRI Model-Based Probabilistic ENSO Forecasts

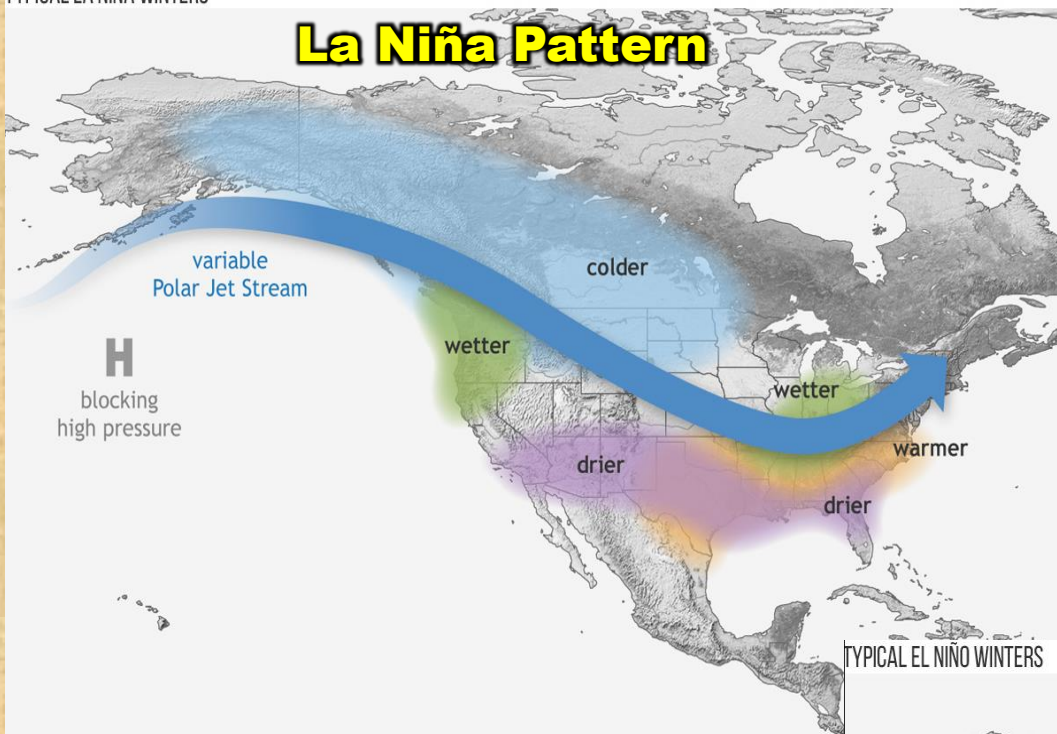
ENSO state based on NINO3.4 SST Anomaly Neutral ENSO:  $-0.5^{\circ}\text{C}$  to  $0.5^{\circ}\text{C}$



Model Predictions of ENSO from Jul 2024

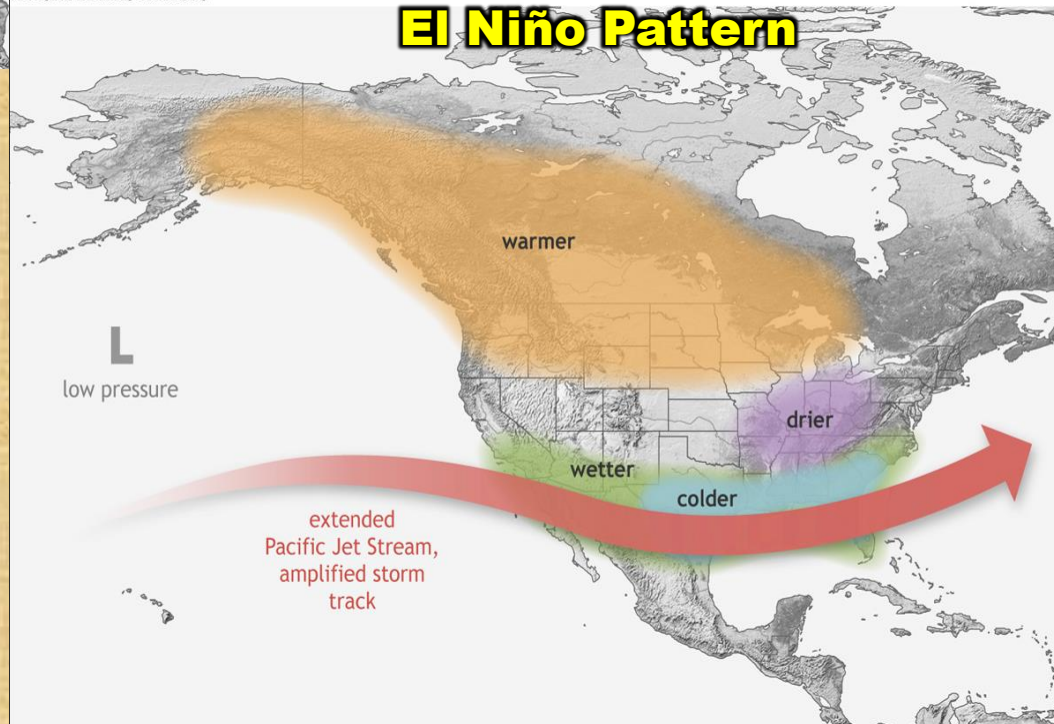


# La Niña Pattern



With a La Niña pattern, a ridge of high pressure tends to build off the west coast of the U.S., blocking most of our Pacific winter storm systems. These storms tend to end up moving across the northern Plains and down to the southeastern part of the country. Of course it is important to remember that these patterns are only what typically happens and are not guaranteed to occur.

# El Niño Pattern



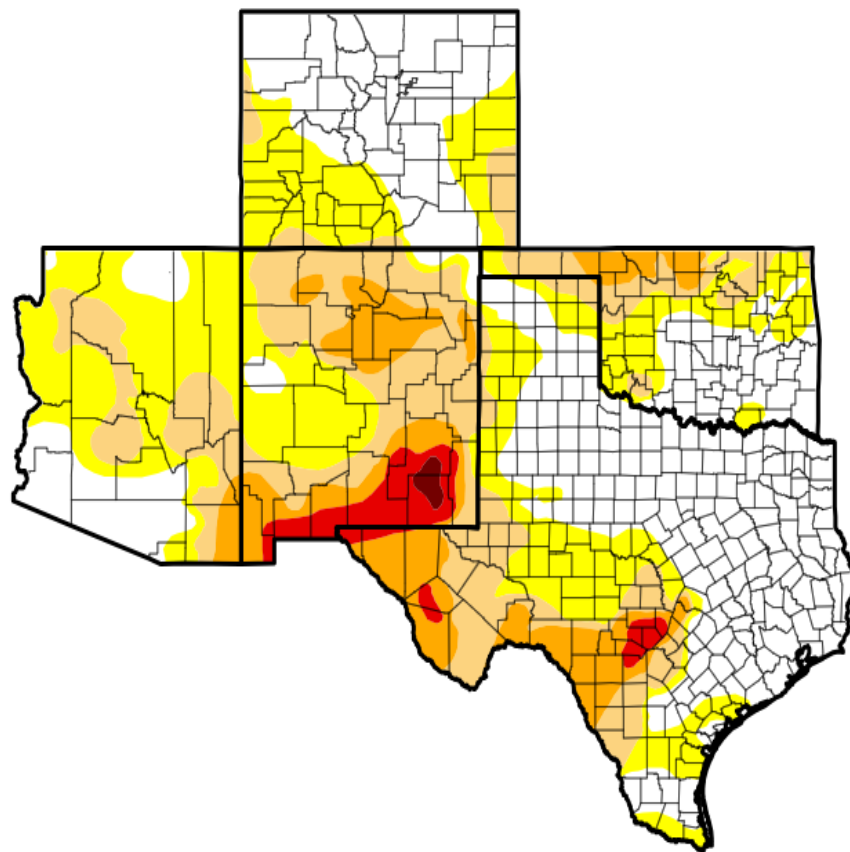
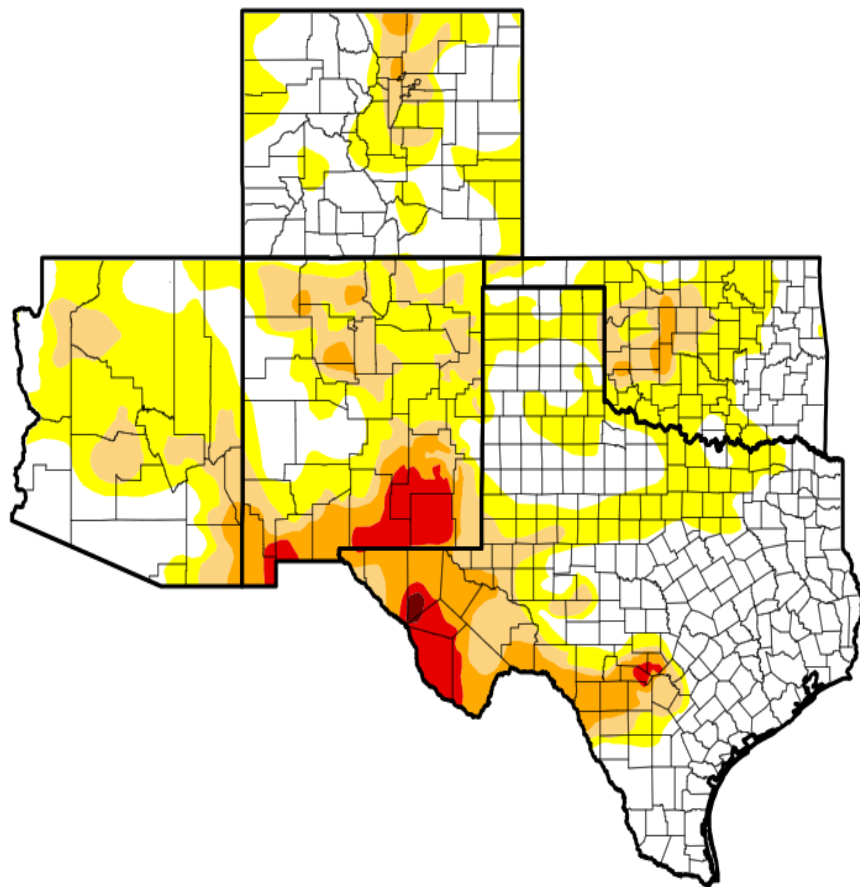
With El Niño, we often see the opposite pattern where the eastern Pacific ridge of high pressure is often weak or non-existent, allowing winter storms to sweep across the southern U.S. This typically will give the southwestern U.S. above normal precipitation.

# Current drought conditions and 3 month change

- Abnormally Dry – D0
- Moderate Drought – D1
- Severe Drought – D2
- Extreme Drought – D3
- Exceptional – D4

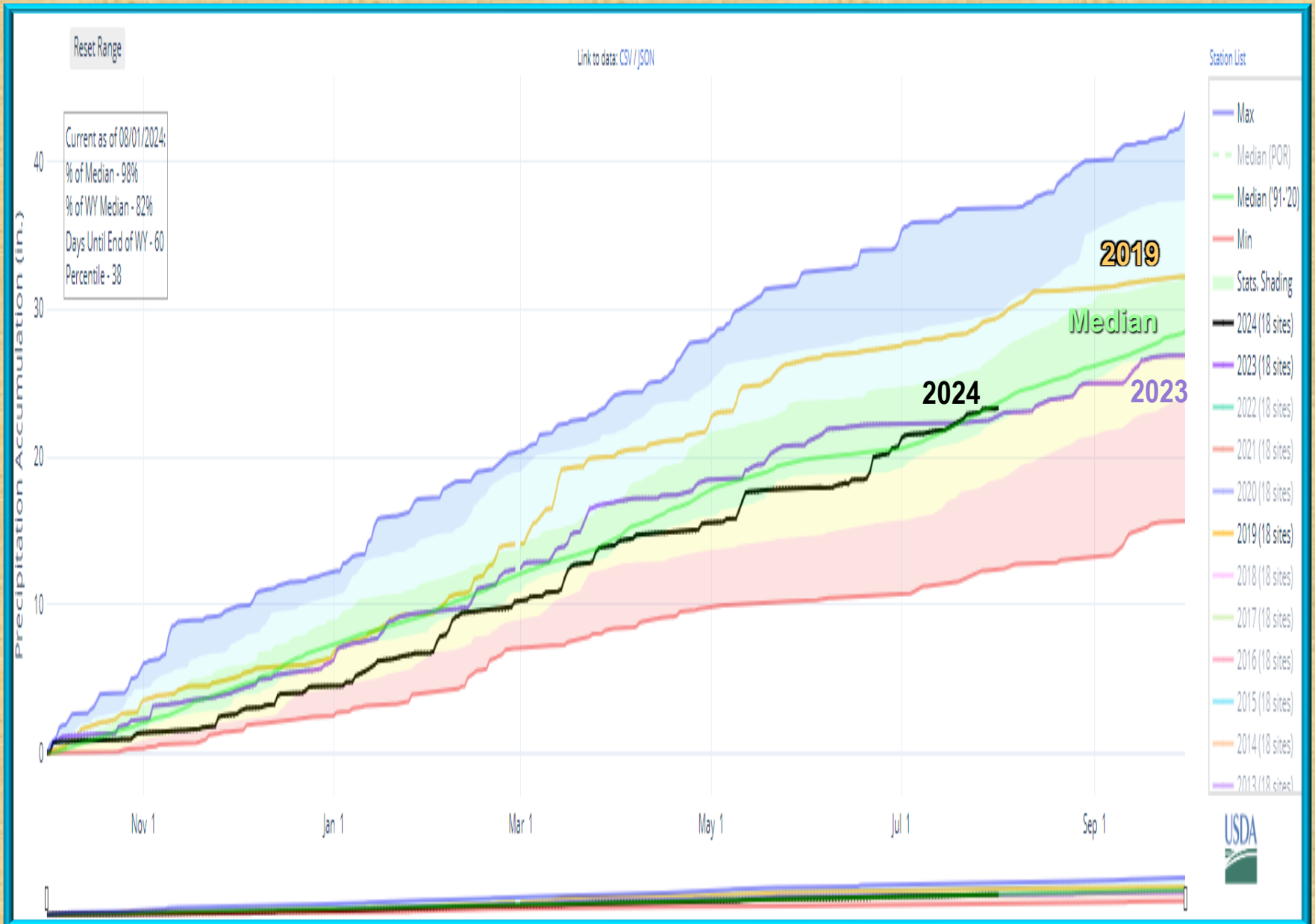
**Jul 30, 2024**

**Apr 30, 2024**



# Precipitation for the Water Year Oct 1 – July 31, 2024

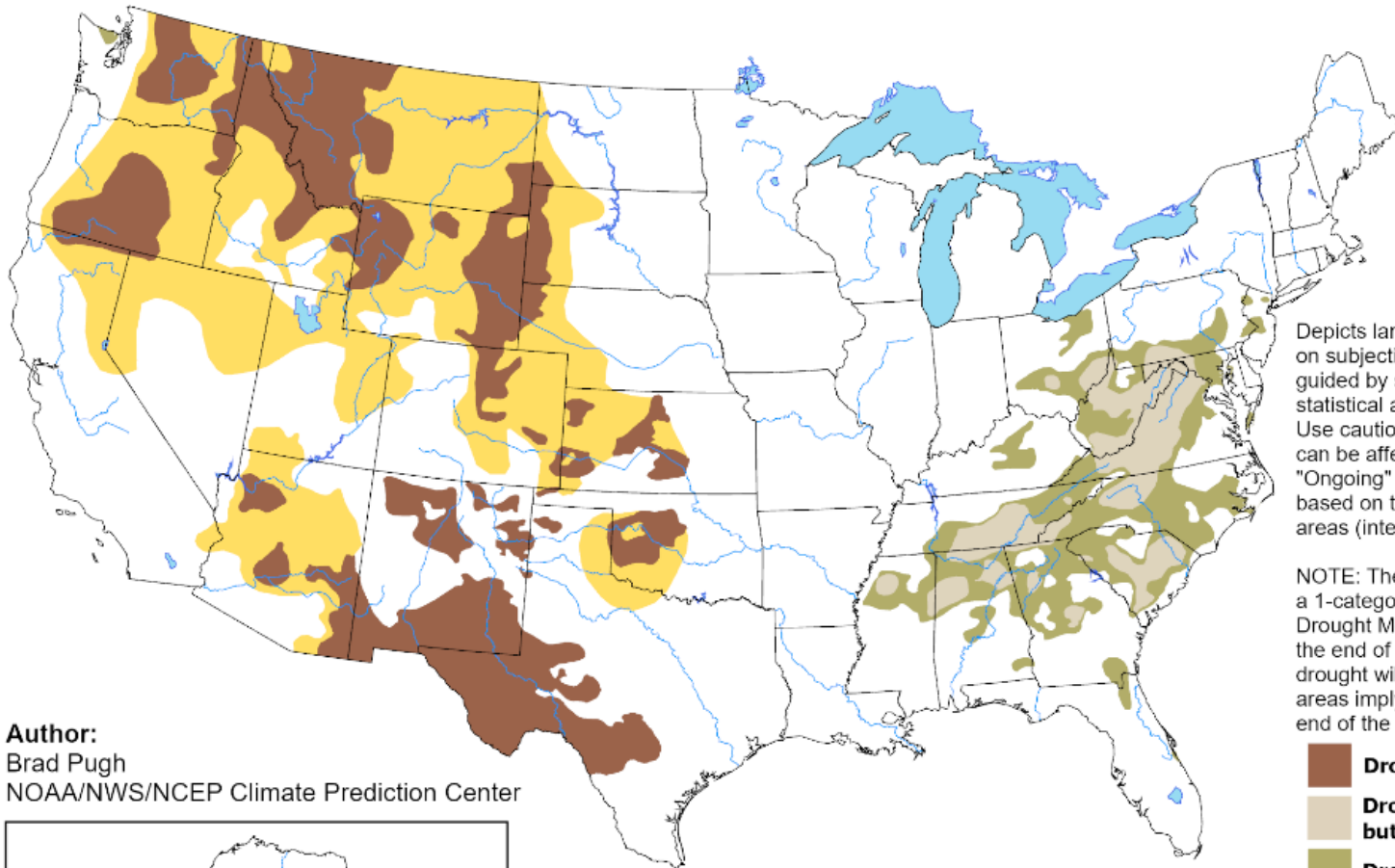
## Compare to last few years and average values



# U.S. Seasonal Drought Outlook

## Drought Tendency During the Valid Period






Valid for July 18 - October 31, 2024  
Released July 18, 2024

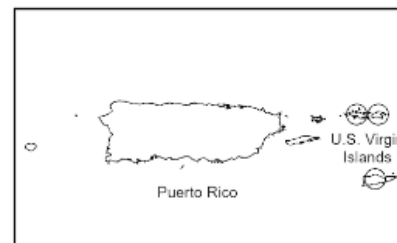
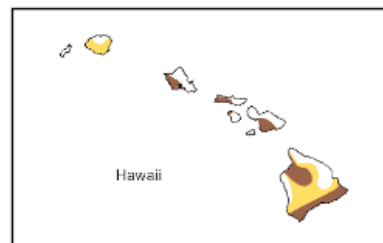


Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short lived events. "Ongoing" drought areas are based on the U.S. Drought Monitor areas (intensities of D1 to 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:**  
Brad Pugh  
NOAA/NWS/NCEP Climate Prediction Center

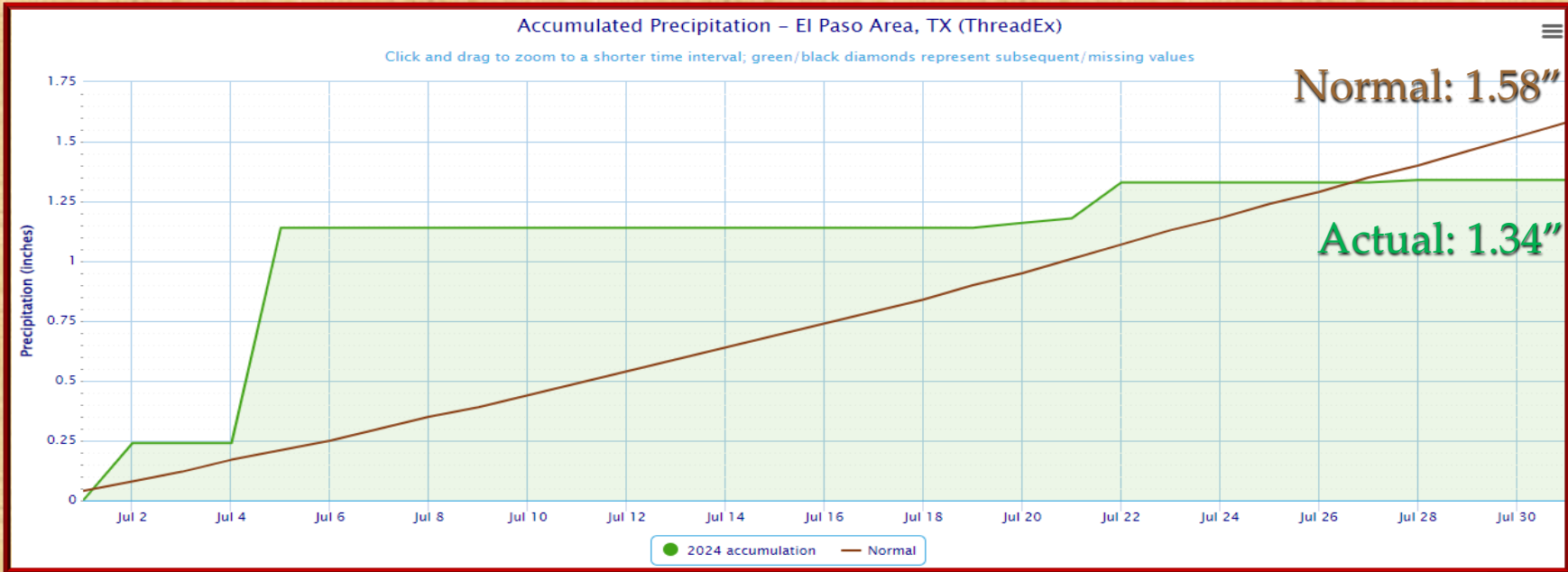
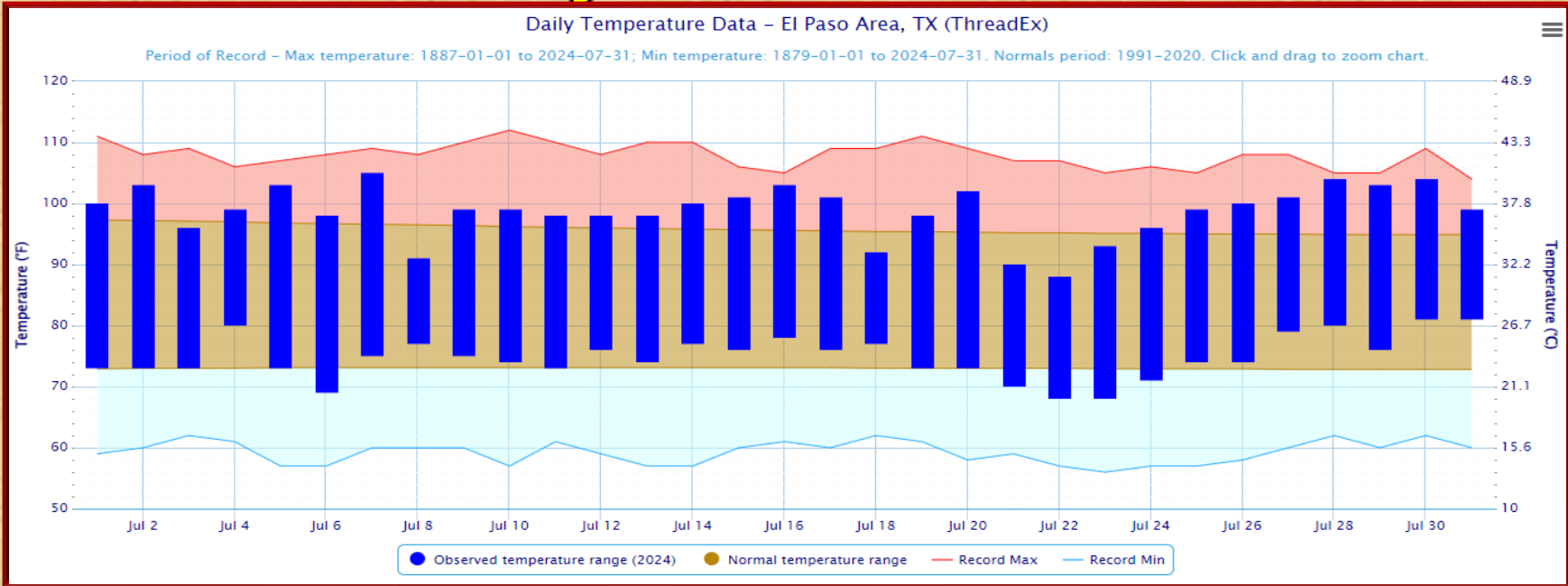
-  **Drought persists**
-  **Drought remains, but improves**
-  **Drought removal likely**
-  **Drought development likely**
-  **No drought**



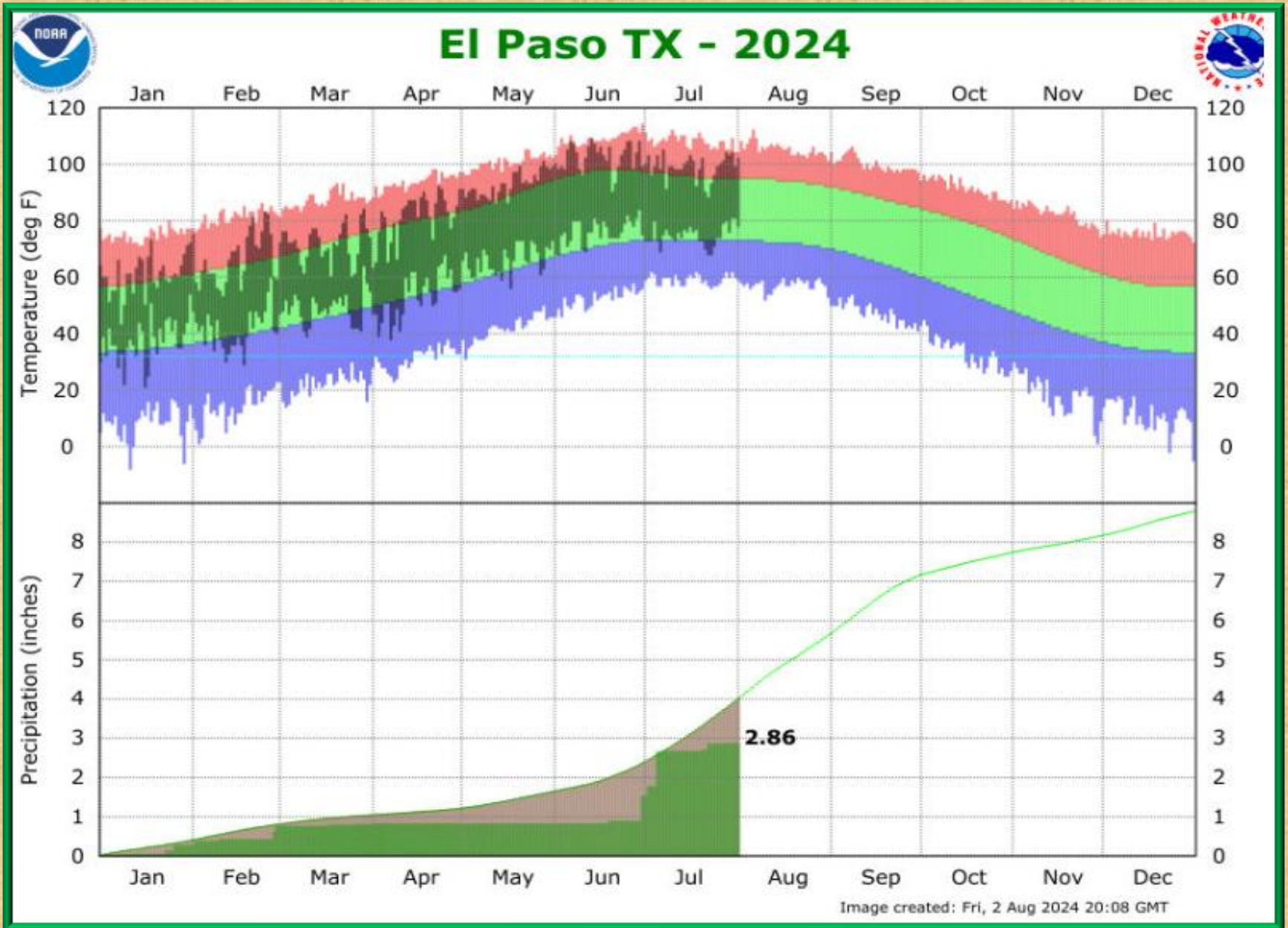
<https://go.usa.gov/3eZ73>

# Temperature and precipitation data for July 2024 in El Paso

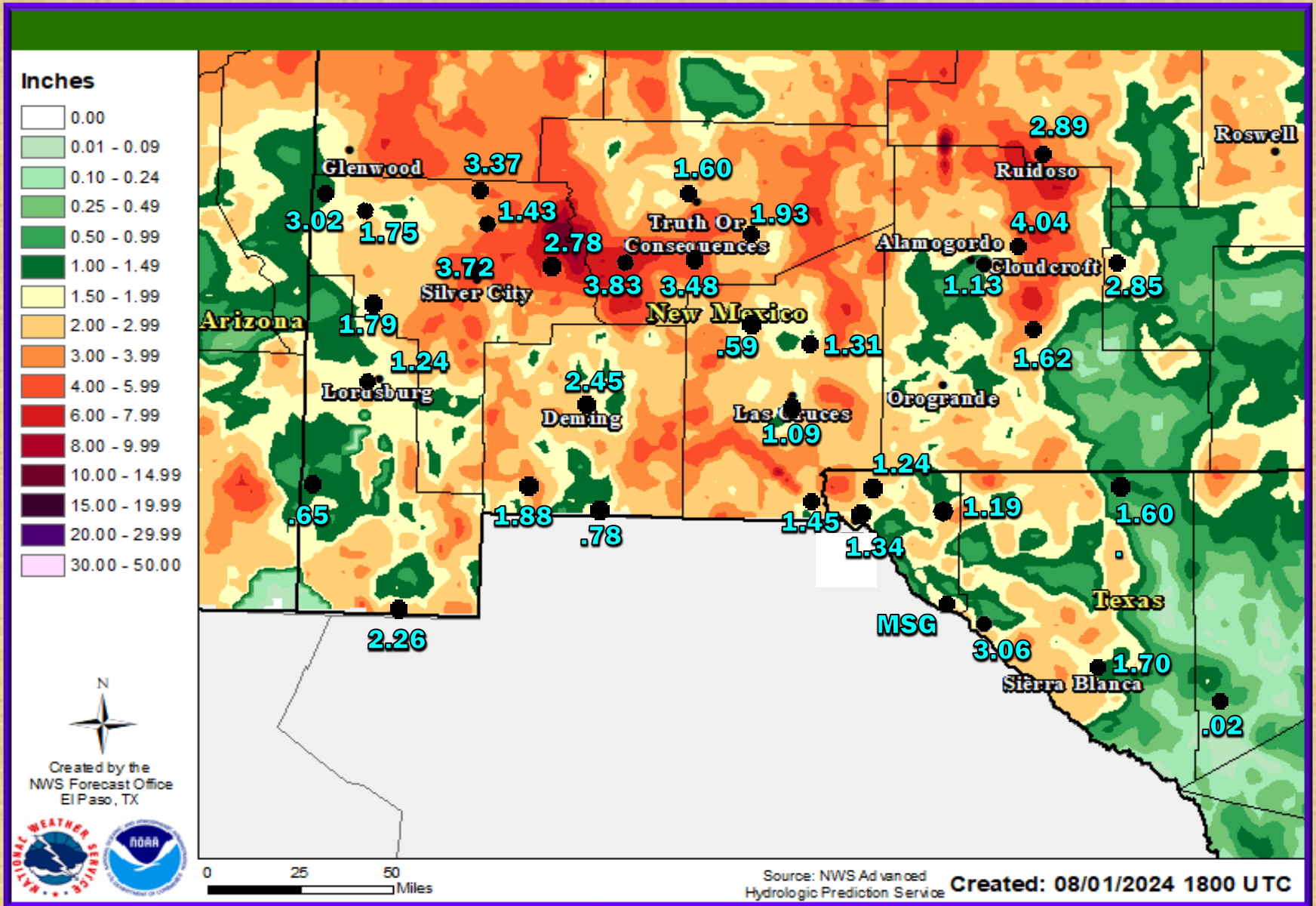
○ = record



# Temperature and Precipitation Year-to-date for 2024 for El Paso

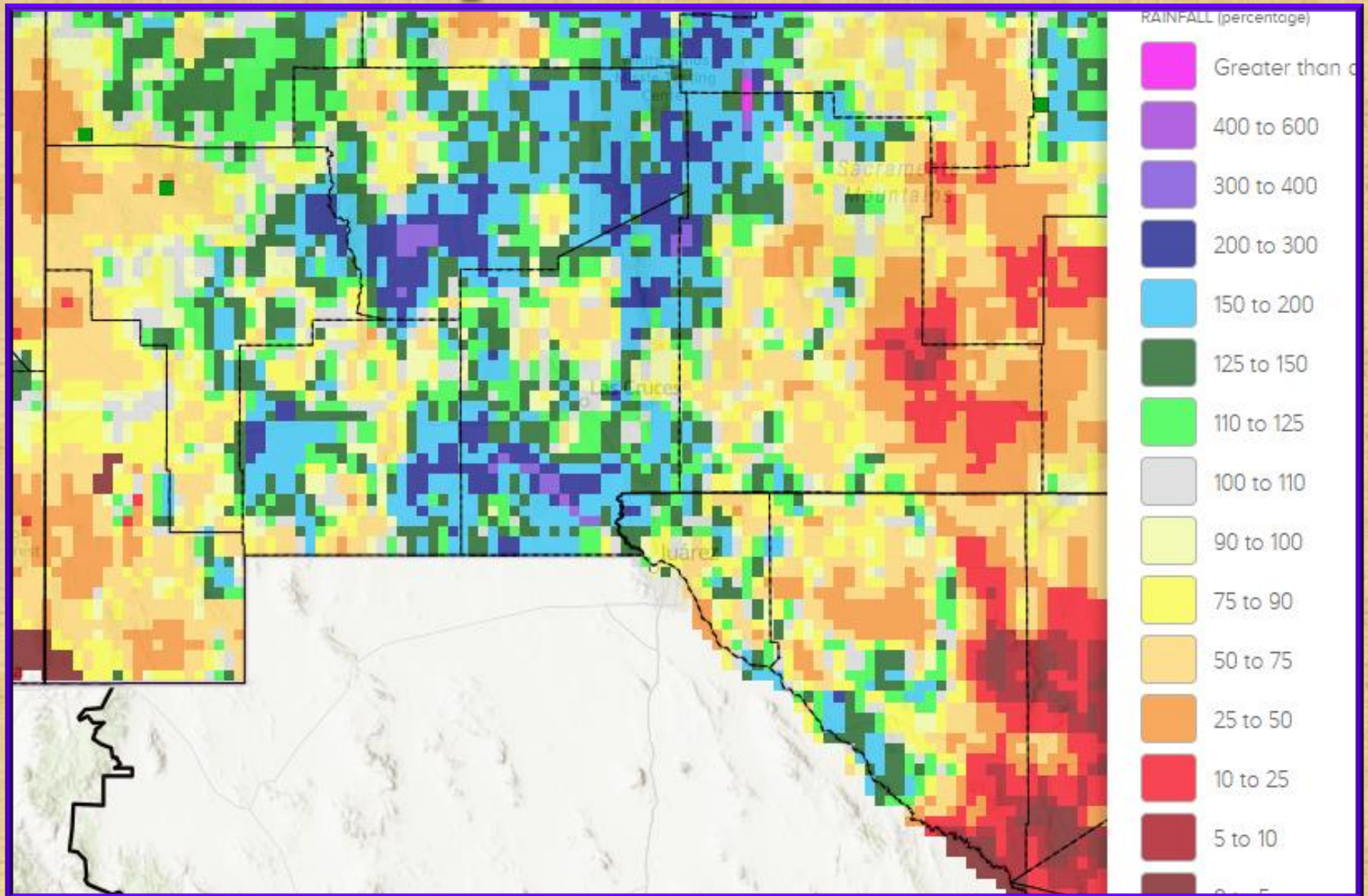


# July 2024 rainfall estimate with surface rainfall reports

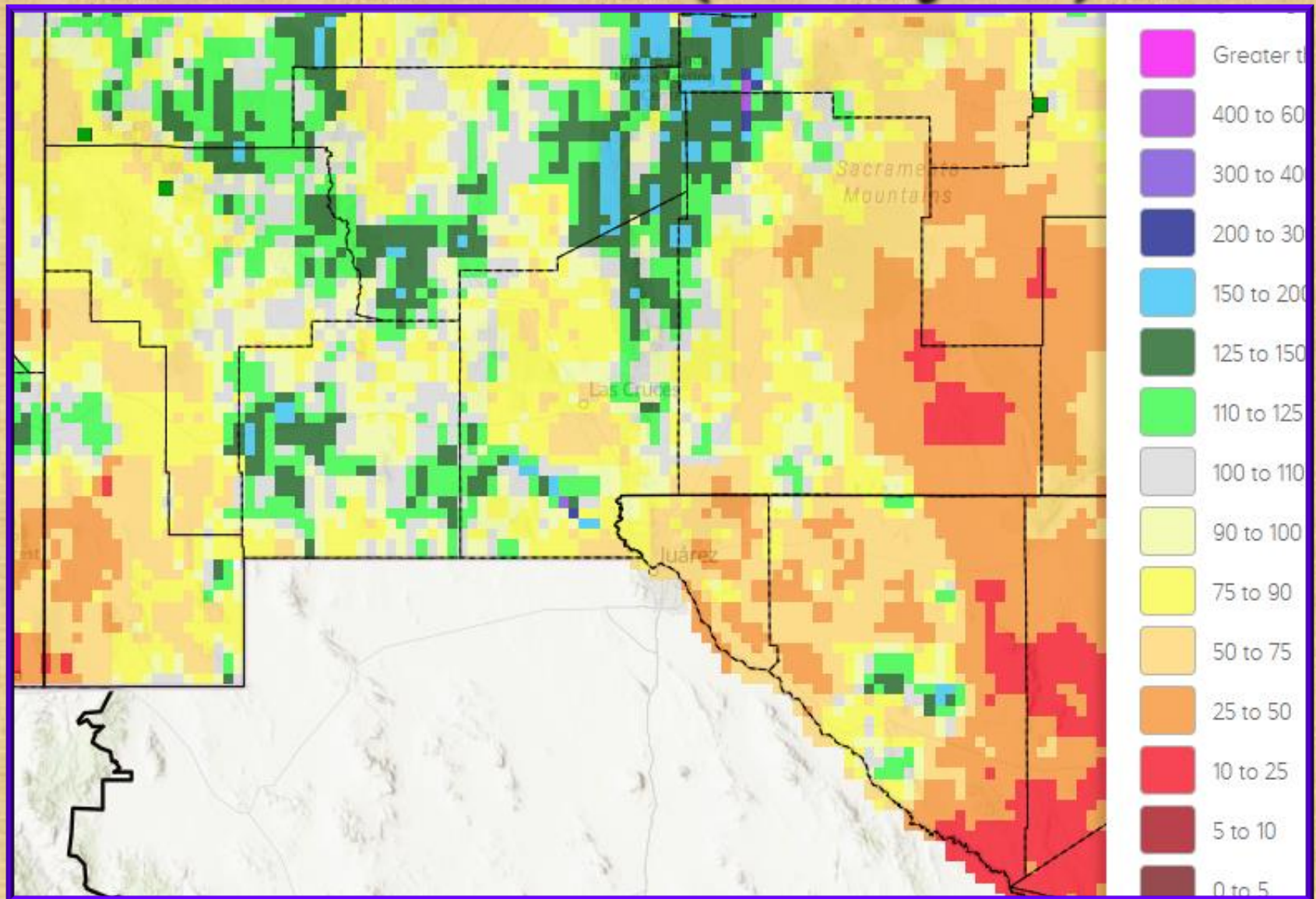




# July 2024 rainfall estimate percent of normal



# Radar rainfall estimate percent of normal for the Water Year (Oct 1 – Jul 31)



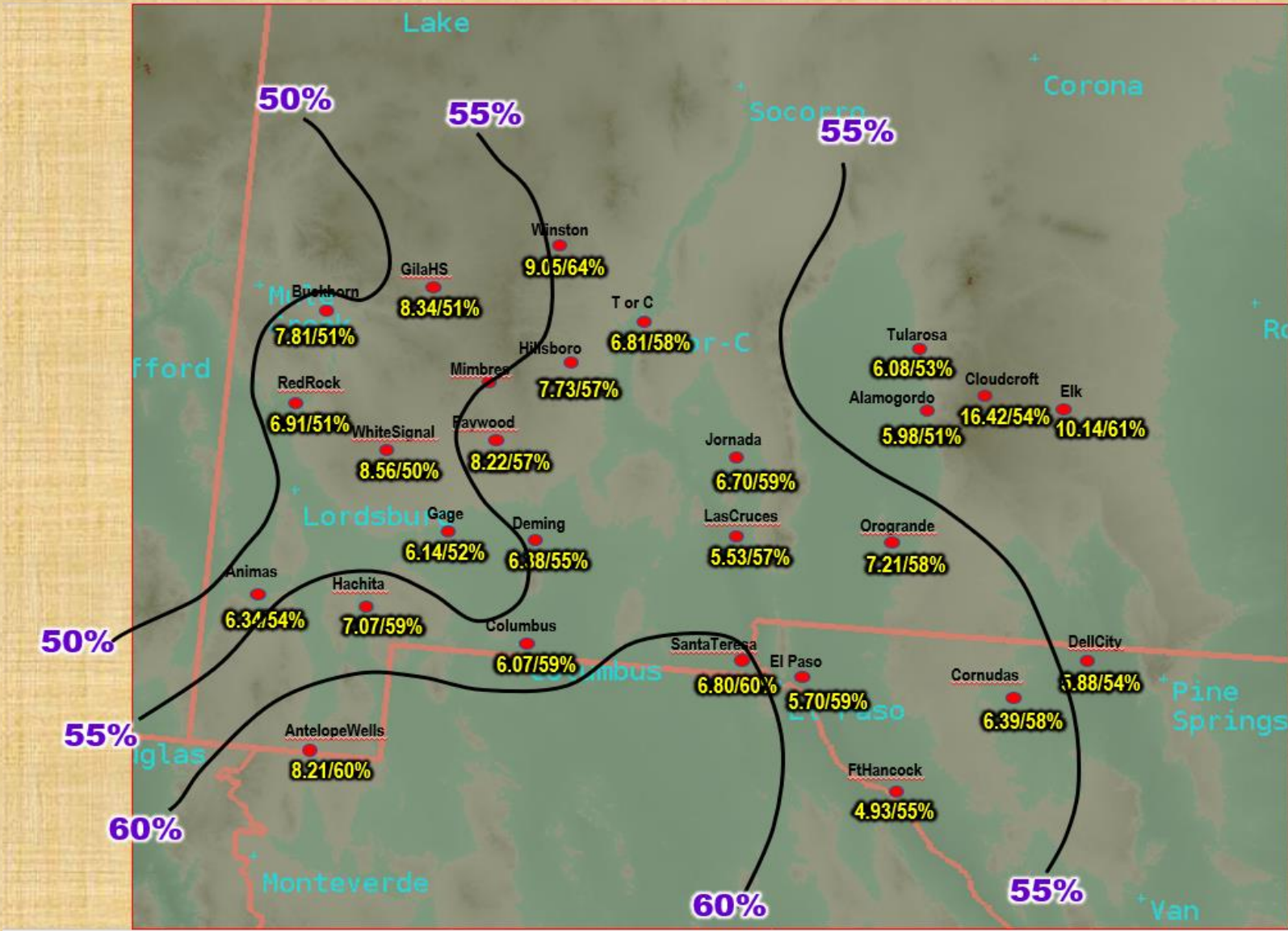
# **Tracking the 2024 Monsoon Season across the El Paso Forecast Area**

A transition to monsoon flow began around June 22 this year with winds shifting to the south and east and bringing in higher humidity. This is about 10-14 days earlier than normal [**see fig 1**]. Widespread thunderstorms over northern Mexico and southern New Mexico also began around this same Time [**see fig 2**]. This flow remained rather consistent throughout July across south-central New Mexico and far west Texas with occasional southwesterly winds over western New Mexico.

Main headline for the 2024 Monsoon is a pretty good start to the rainfall. The counties which contain or are adjacent to the Rio Grande mostly saw above normal rainfall for the early Monsoon season so far while the more distant counties of Hudspeth, Hidalgo and western Grant were below normal. July 31<sup>st</sup> roughly marks the half way point for a typical Monsoon season.

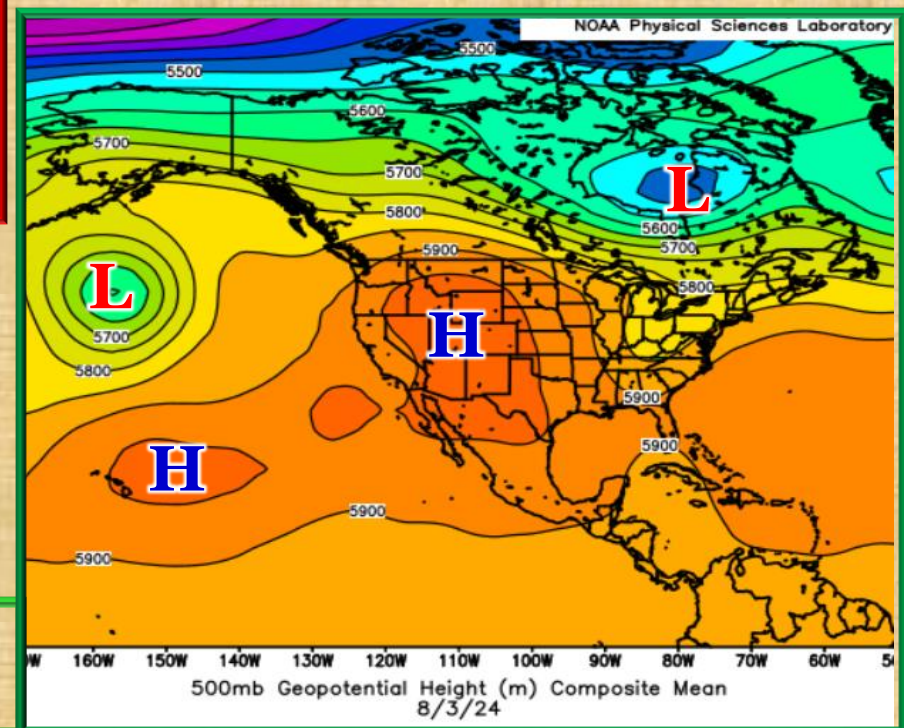
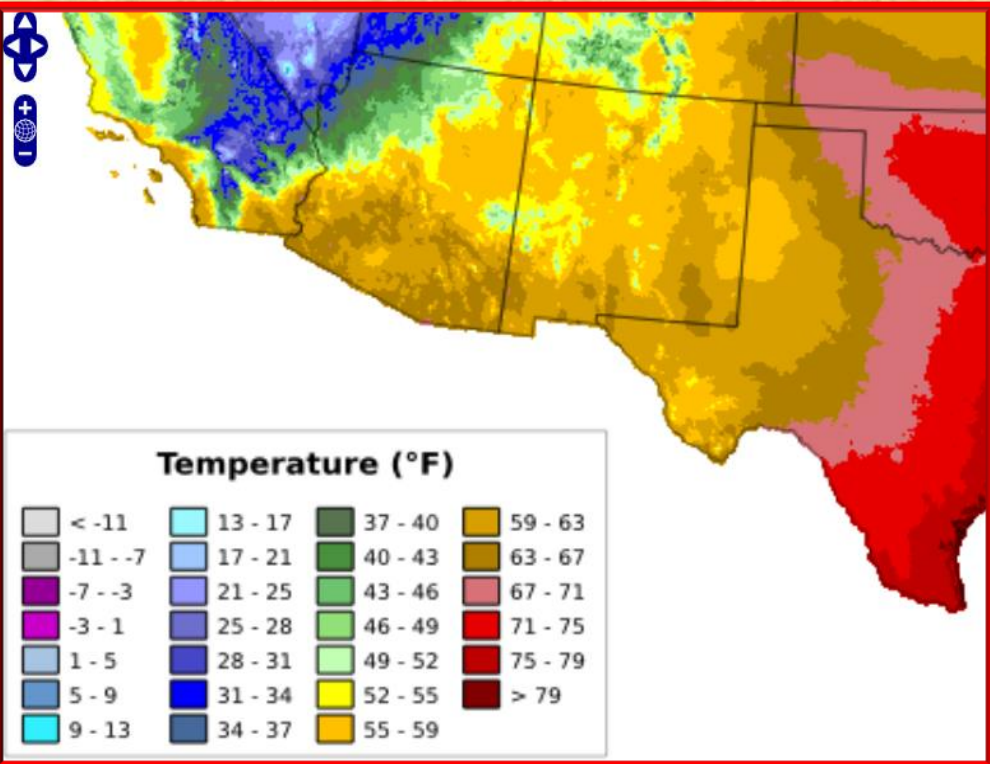
Sea surface temperatures (SST) of the northern Gulf of California and western Gulf of Mexico are a good indicator of how far we've progressed through the monsoon. SSTs reaching 29 degrees typically indicate the 1/3 progress mark, which was quickly reached on July 17<sup>th</sup> [**see fig 3**].

# Percent of Annual Precipitation Falling During the Monsoon Season (Jun15-Sep 30)



# Tracking the 2024 Monsoon Season across the El Paso Forecast Area. Fig 1

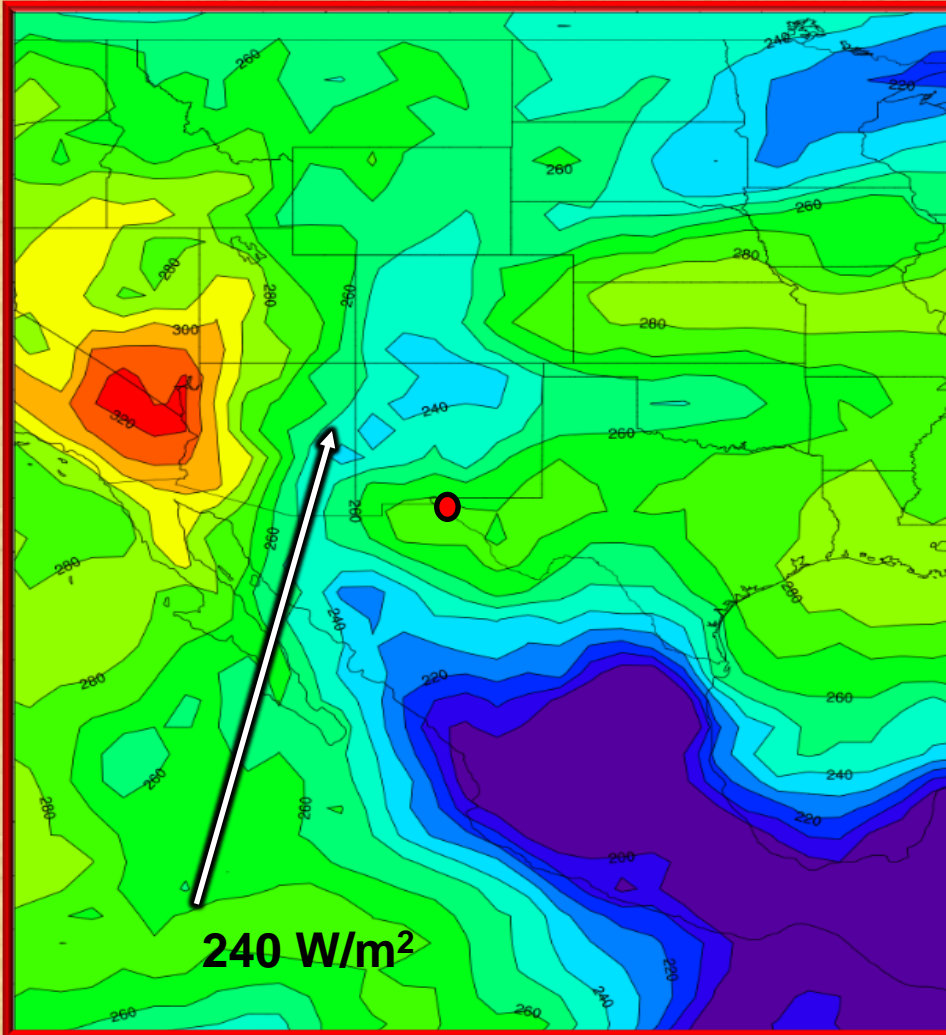
July 1– Dewpoints in the 50s. They first reached this level around June 21.



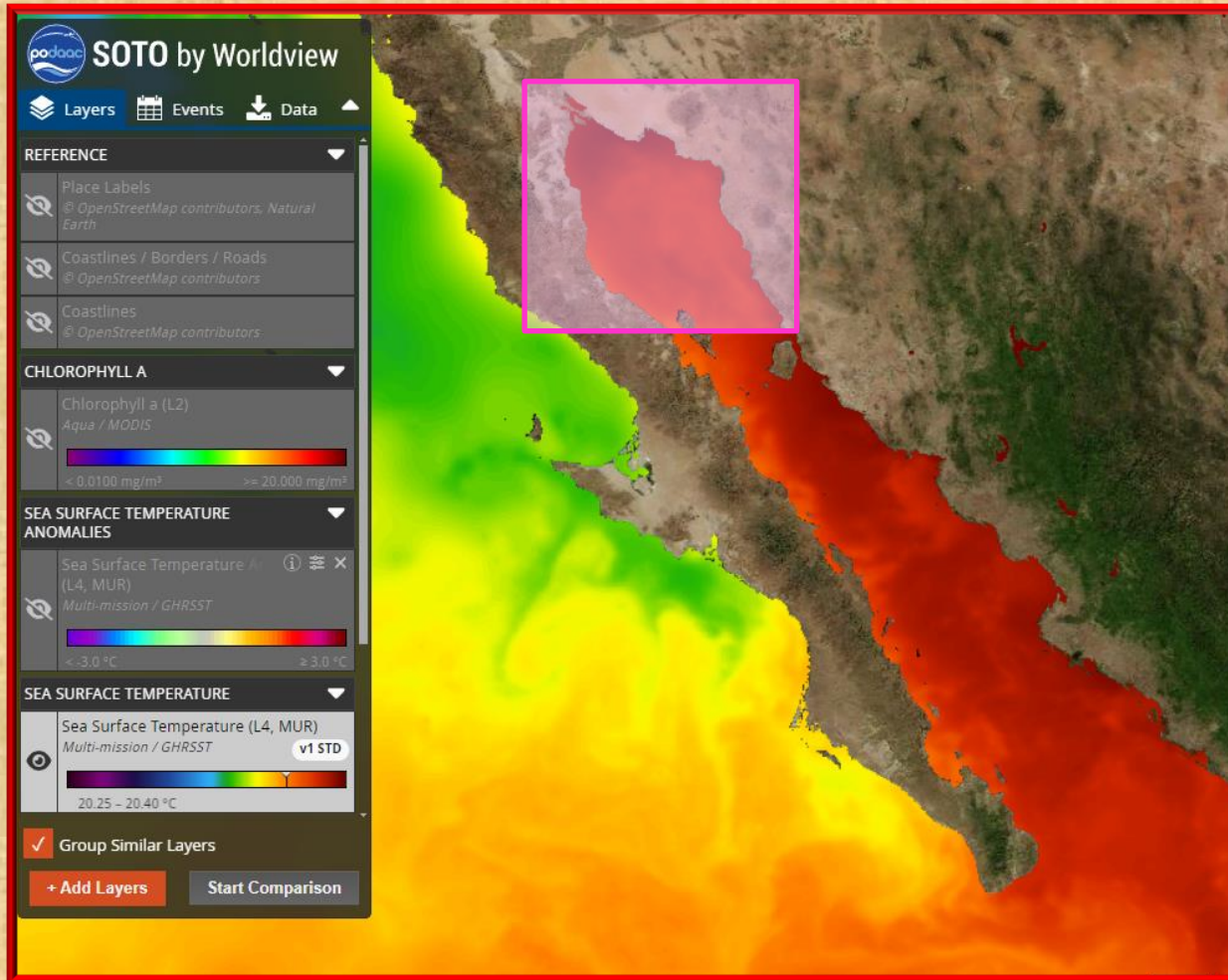
By June 22, 500mb (18,000 ft) sub-tropical high reaches the Desert Southwest

# Tracking the 2024 Monsoon Season across the El Paso Forecast Area. Fig. 2

June 20-24 - Outgoing Longwave Radiation (OLR) diminishes to less than 240 W/m<sup>2</sup> in the area though over much of New Mexico. Thick clouds and anvil tops from thunderstorms diminish the OLR values, often indicative of the monsoon moisture and thunderstorms moving into the area. (Pentad data Jun 20-25)



# Tracking the 2024 Monsoon Season across the El Paso Forecast Area. Fig. 3



July 17 – Sea surface temperatures in the northern Gulf of California reach 29C deg (84F)

Studies have shown that once northern Gulf of California sea surface temperatures reach 29C, New Mexico/Arizona will receive around 65-70% of their total summer rainfall.

**Fig. 4****Percent of monsoon rainfall after 29C**

Year	29C Date	ELP	DMN	CLD	TCS	HIL	BKN
2023	Jul 17	89	100	83	97	100	81
2022	Jun 29	85	82	85	67	74	80
2021	Jul 16	51	75	68	60	63	71
2020	Jul 22	88	65	67	98	89	86
2019	Aug 8	83	91	62	67	71	34
2018	Jul 21	59	46	74	80	62	61
2017	Jul 23	58	67	66	88	61	64
2016	Aug 3	93	92	71	79	85	73
2015	Jul 27	63	43	56	53	61	57
2014	Jul 23	92	82	77	91	89	MSG
2013	Aug 8	61	68	61	88	75	MSG
2012	Jul 24	53	64	73	42	52	80
2011	Jul 29	37	90	36	86	62	68
2010	Jul 29	47	31	43	33	47	32
2009	Jul 24	54	61	47	56	65	56
2008	Jul 27	48	39	54	46	58	58
2007	Jul 26	65	62	60	91	72	100
2006	Jul 29	84	81	73	86	85	MSG
2005	Jul 30	95	79	72	83	87	80
AVE	Jul 25	68	68	64	72	69	67

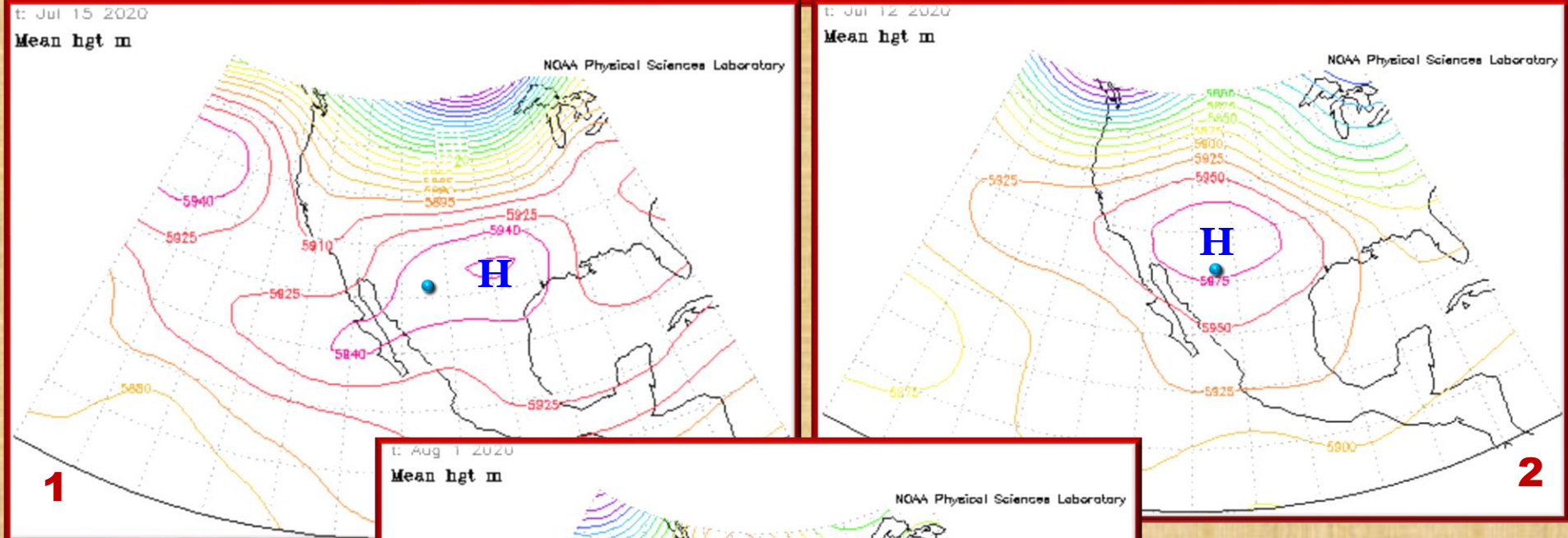
**ELP=El Paso Intl Airport**  
**DMN=Deming Airport**  
**CLD=Cloudcroft COOP**  
**TCS=T or C Airport**  
**HIL=Hillsboro COOP**  
**BKN=Buckhorn COOP**

The northern Gulf of California sea surface temperature this year reached 29C on July 17. Research has shown that, on average, around 65-75% of the total Monsoon rainfall will fall after that date. As this table shows, this year even exceeded the average figures.



# Tracking the 2023 Monsoon Season across the El Paso Forecast Area. Fig. 5

Position of NAM upper high determines our rainfall potential. Blue dot represents El Paso.

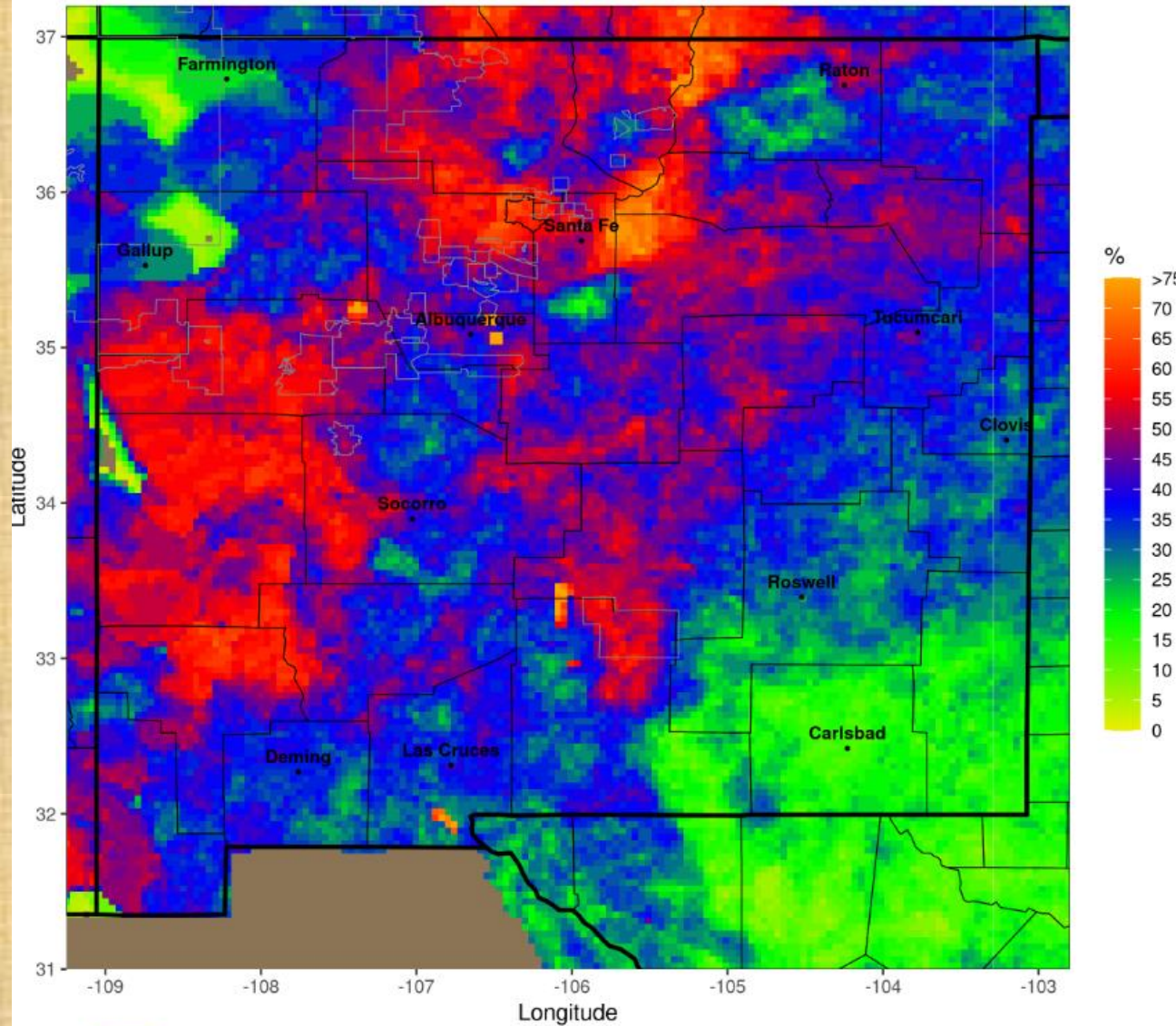


**No. 1** High center east of New Mexico. Often brings ample tropical moisture and widespread heavy rain and flooding to the area under southerly flow.

**No. 2** High center over New Mexico. Often brings very hot temperatures and little if any rain (usually limited to the mountains).

**No. 3** High center north and west of New Mexico. Often brings scattered storms with hit and miss heavy rains and large hail and strong wind potential.

# Percent of days with rain (>0.01 in): 2024-06-15 to 2024-08-01



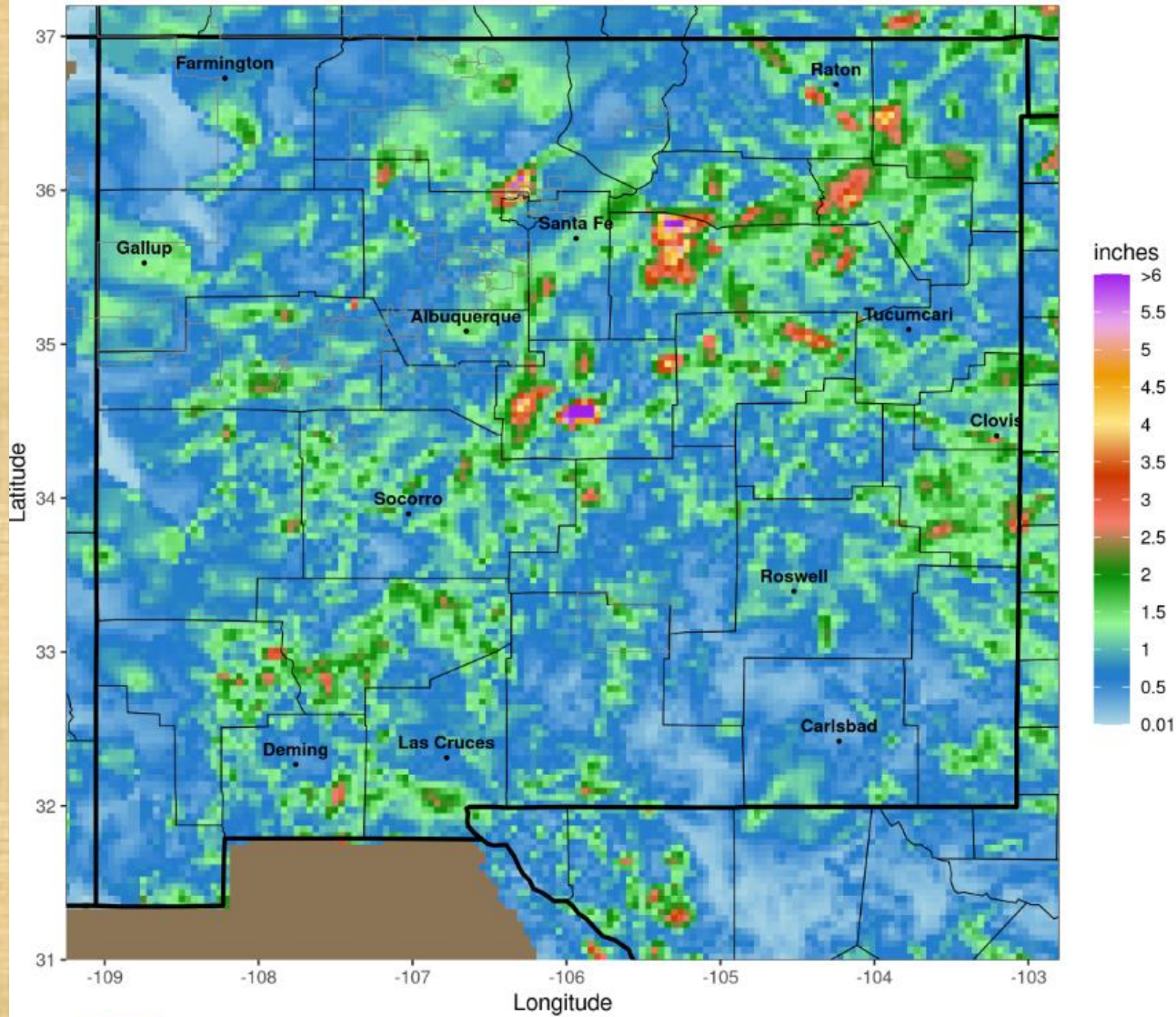
**This map shows the percentage of measurable rainfall days so far during the Monsoon season. Courtesy of Climate Assessment for the Southwest.**



THE UNIVERSITY OF ARIZONA  
**Cooperative Extension**

Plot created: 2024-08-01  
The University of Arizona  
<https://cals.arizona.edu/climate/>  
Data Source: NOAA MPE Analysis  
<https://water.weather.gov/precip/>

# Max 1-day Precipitation (in.): 2024-06-15 to 2024-08-01



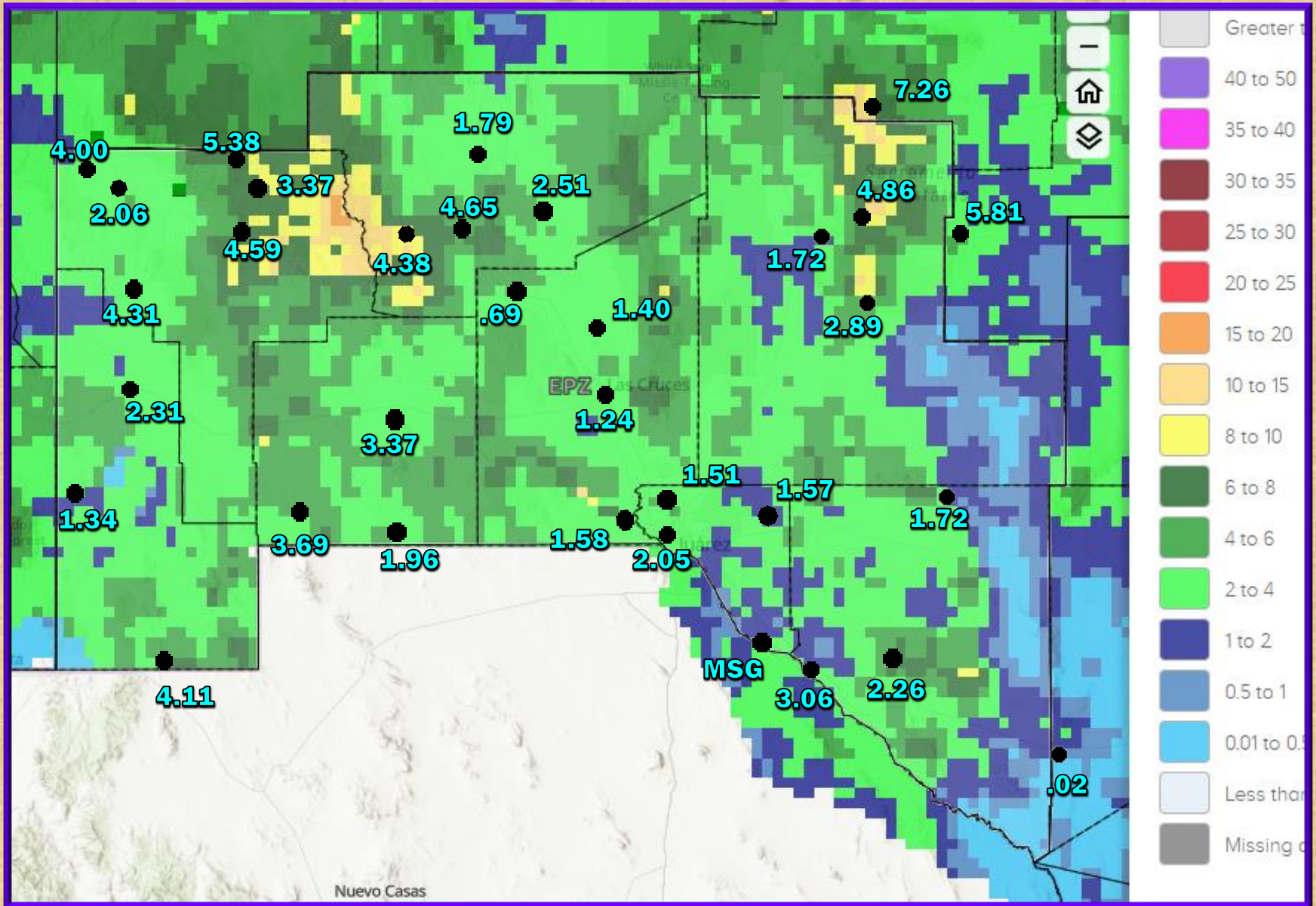
This map shows greatest one day rainfall total so far during the Monsoon season. Courtesy of Climate Assessment for the Southwest.



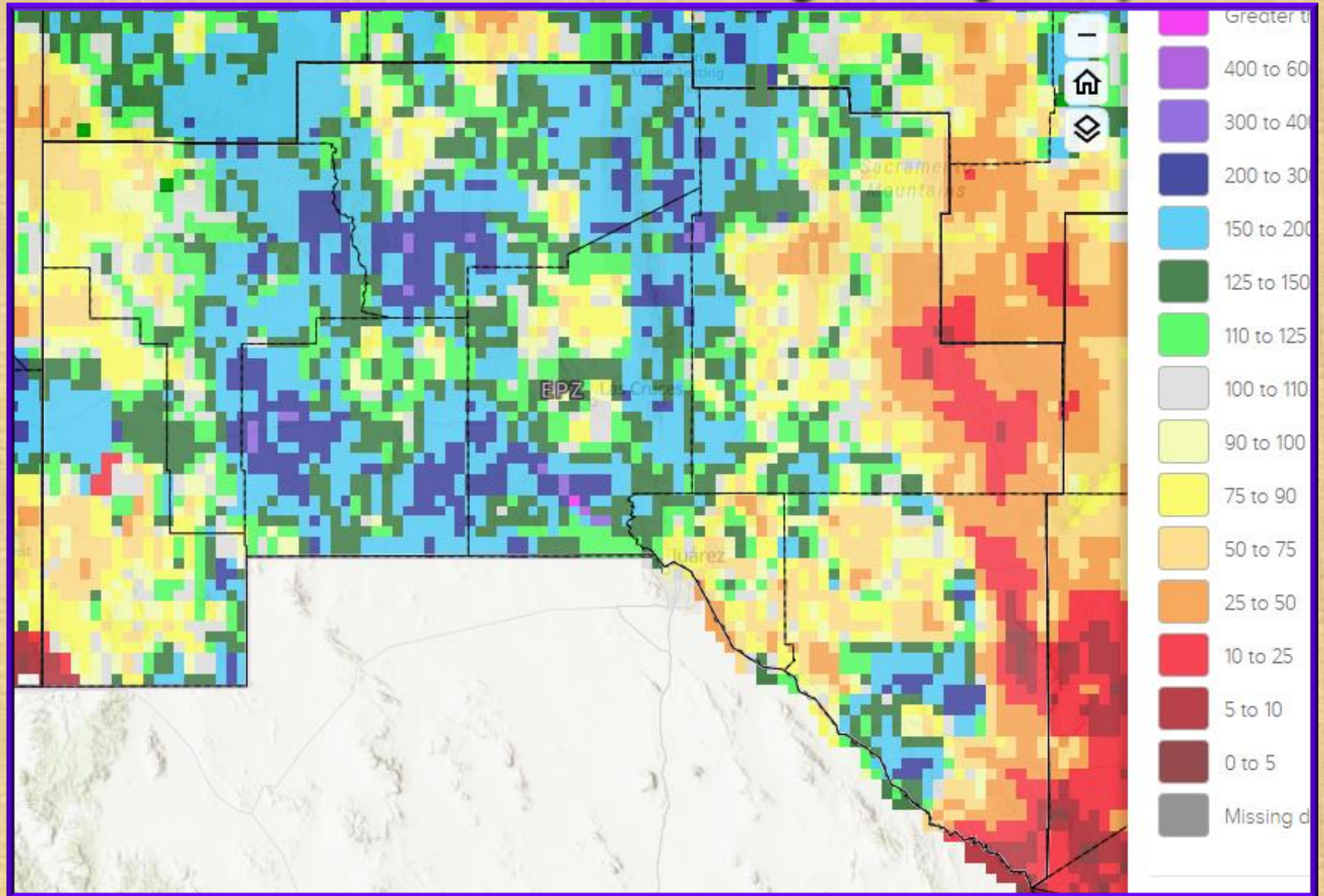
THE UNIVERSITY OF ARIZONA  
Cooperative Extension

Plot created: 2024-08-01  
The University of Arizona  
<https://cals.arizona.edu/climate/>  
Data Source: NOAA MPE Analysis  
<https://water.weather.gov/precip/>

# Radar rainfall estimate for the Monsoon Season 2024 (June 1 – July 31, 2024)



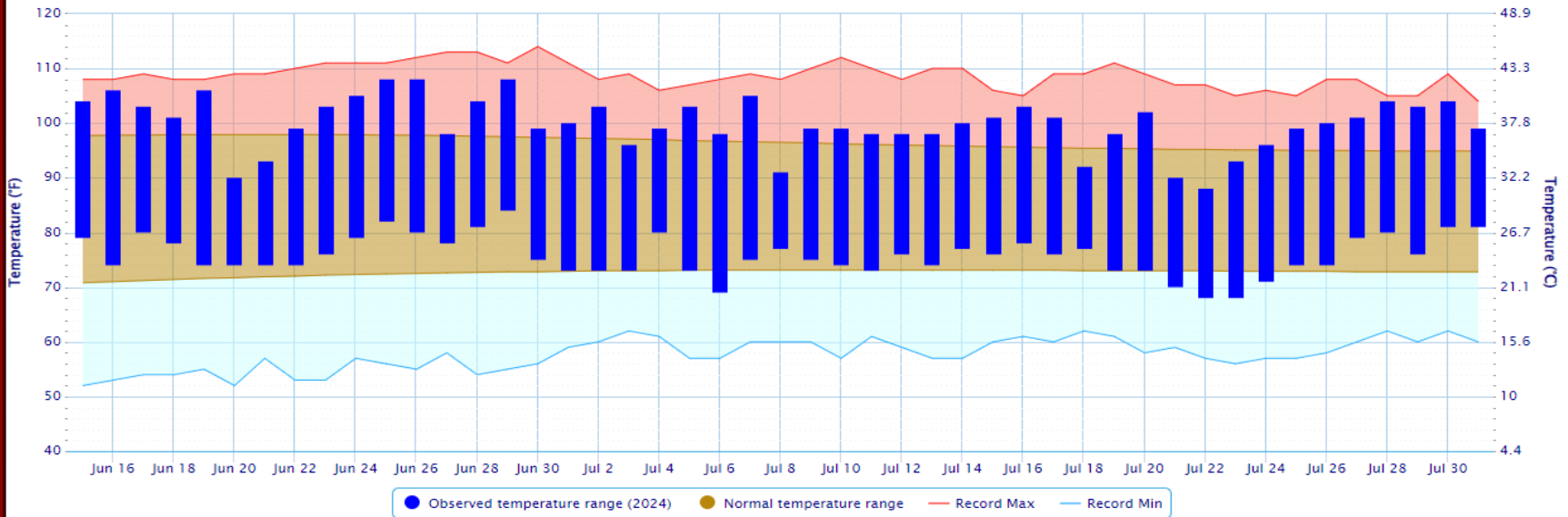
# Radar rainfall estimate percent of normal for Monsoon season 2024 (June 1-Jul 31)



# Temperature and precipitation data through July 31, 2024 Monsoon Season in El Paso

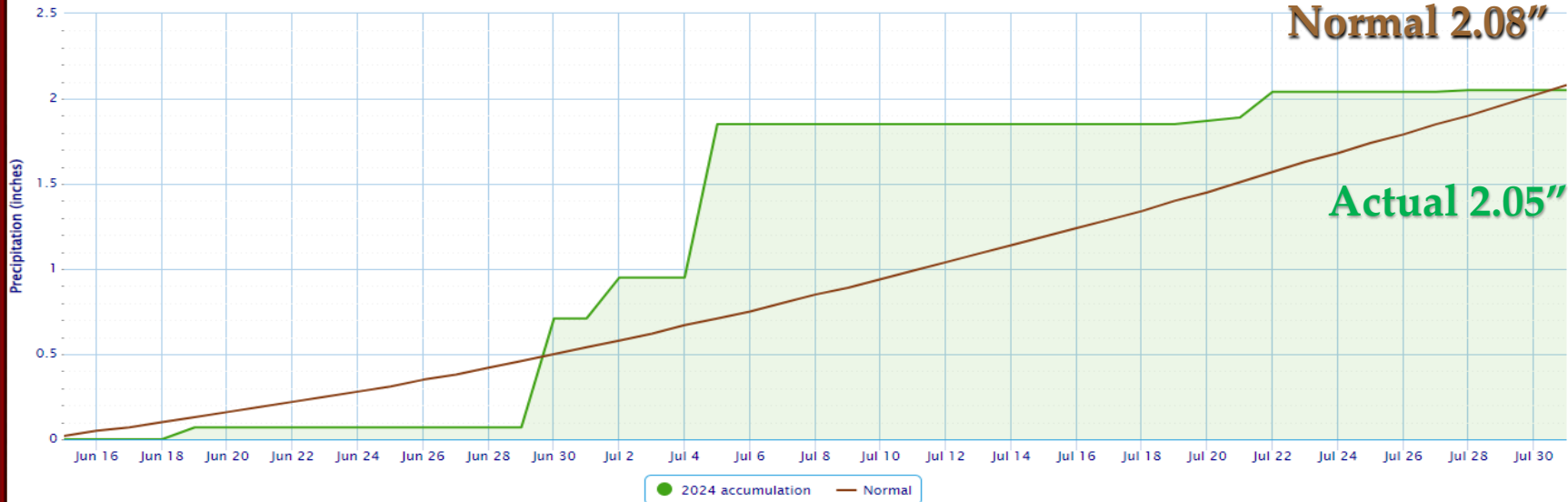
### Daily Temperature Data – El Paso Area, TX (ThreadEx)

Period of Record – Max temperature: 1887-01-01 to 2024-07-31; Min temperature: 1879-01-01 to 2024-07-31. Normals period: 1991-2020. Click and drag to zoom chart.



### Accumulated Precipitation – El Paso Area, TX (ThreadEx)

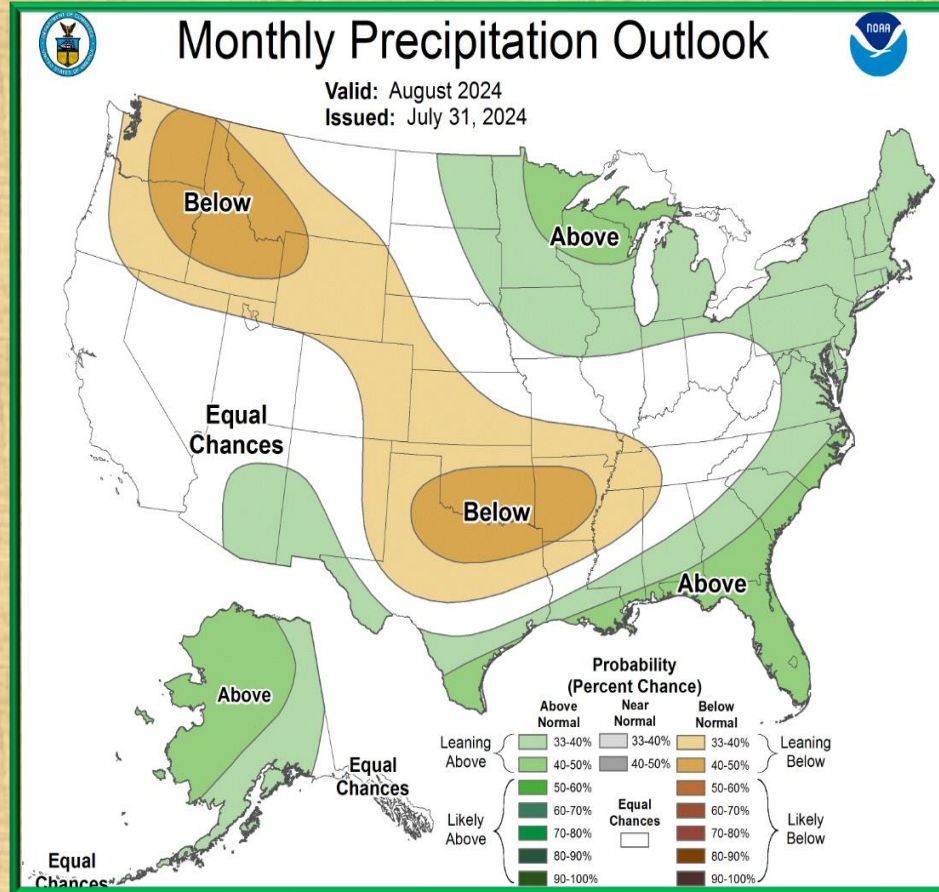
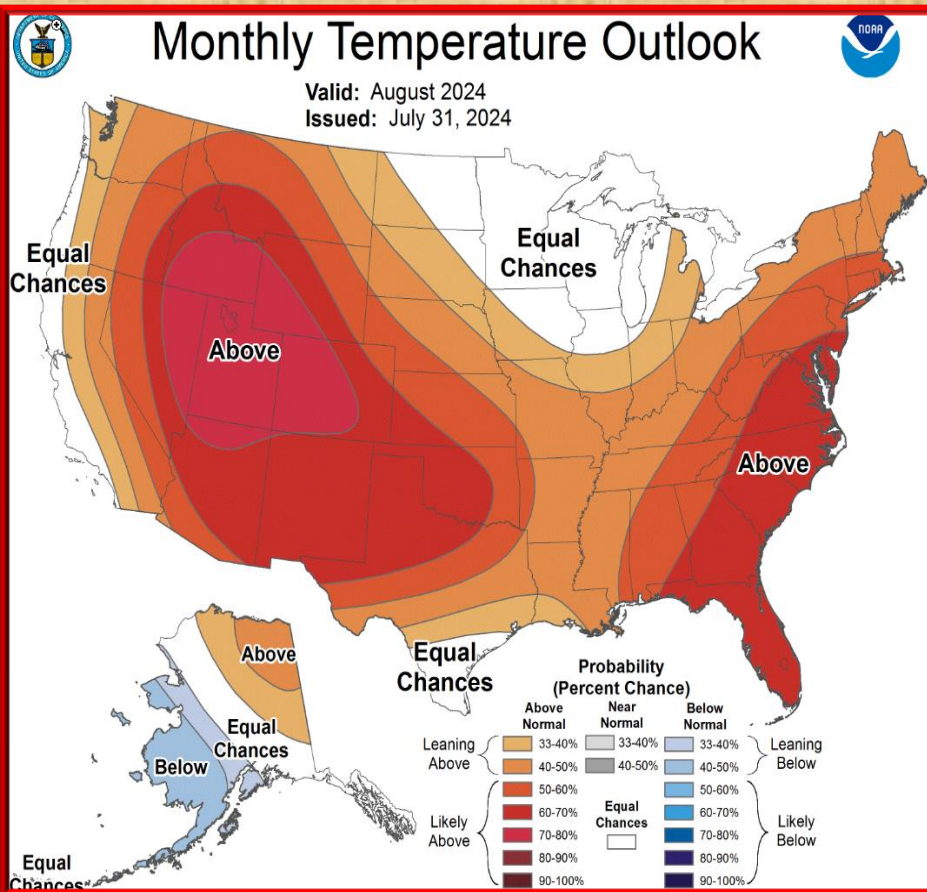
Click and drag to zoom to a shorter time interval; green/black diamonds represent subsequent/missing values



# Temperature and precipitation outlook For Aug 2024

## Temperature

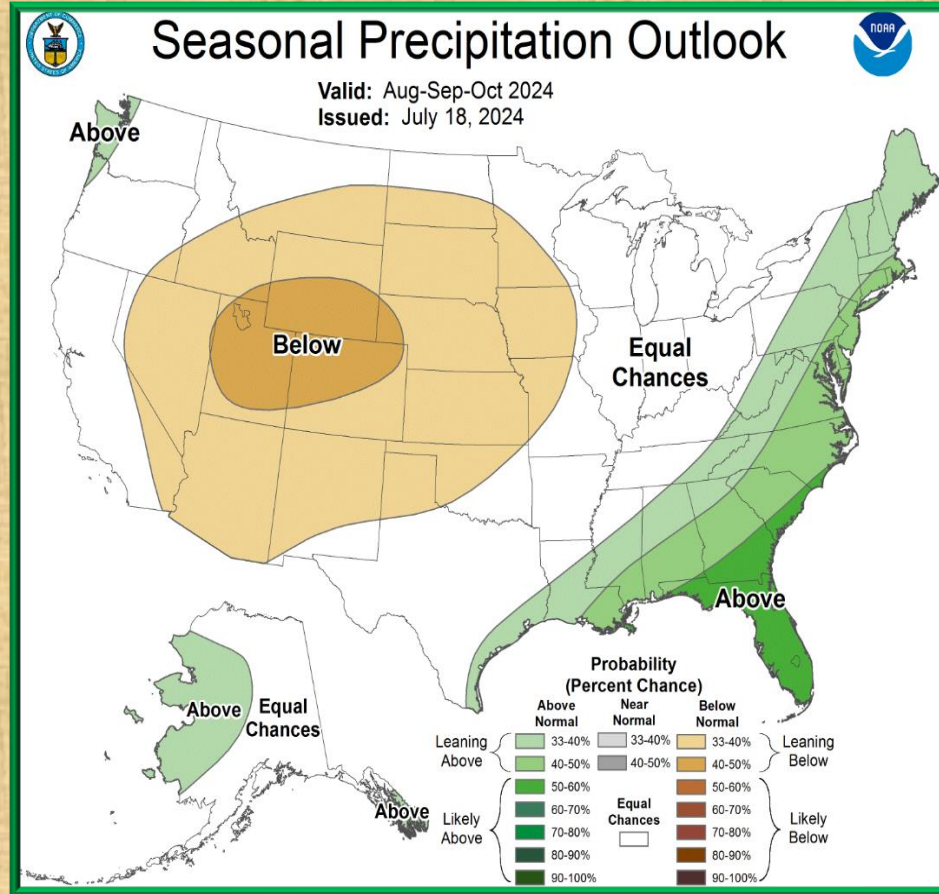
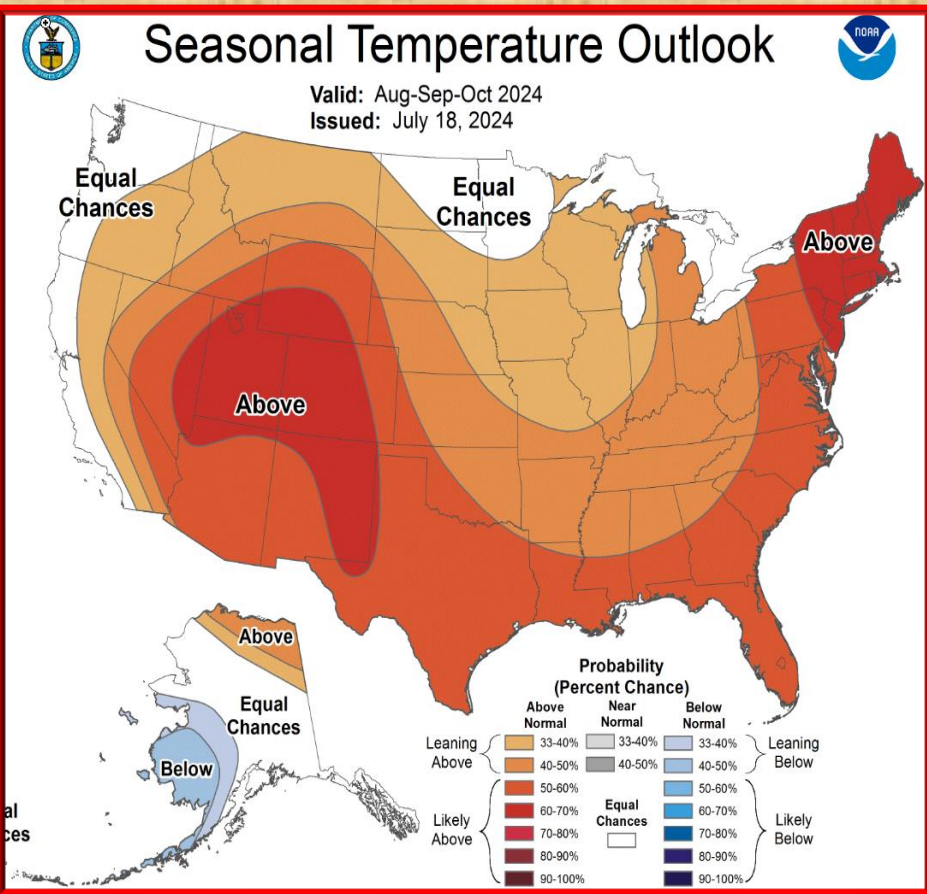
## Precipitation



# Temperature and precipitation outlook for Aug-Oct 2024

## Temperature

## Precipitation

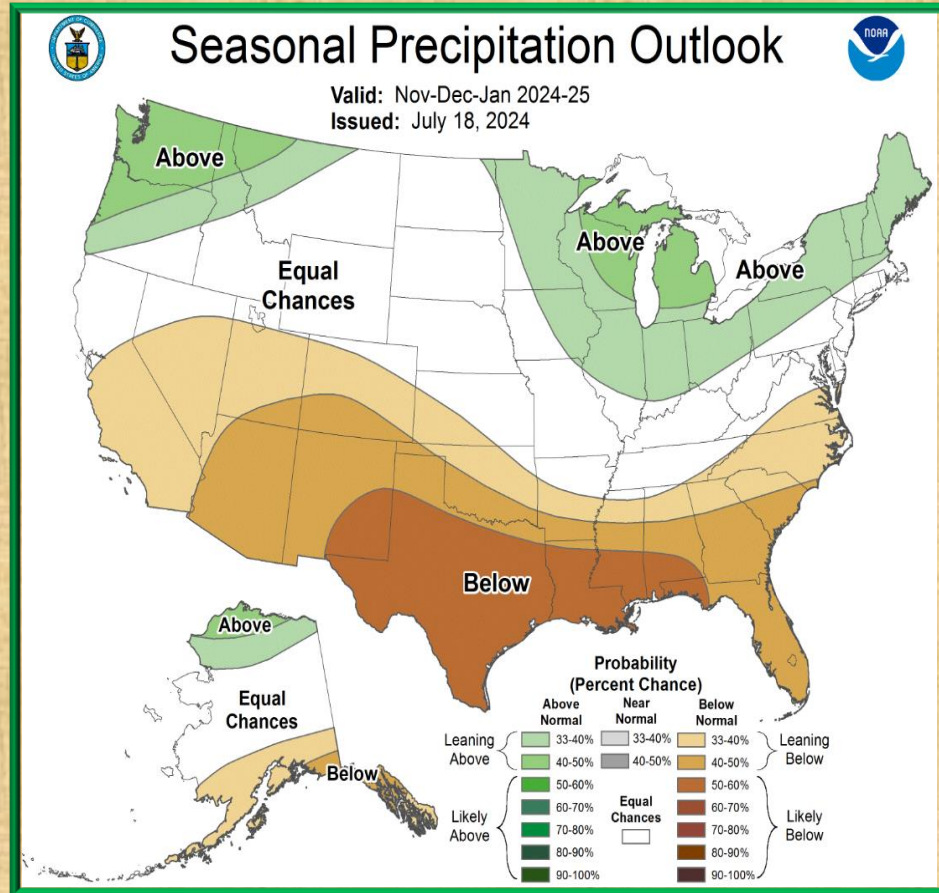
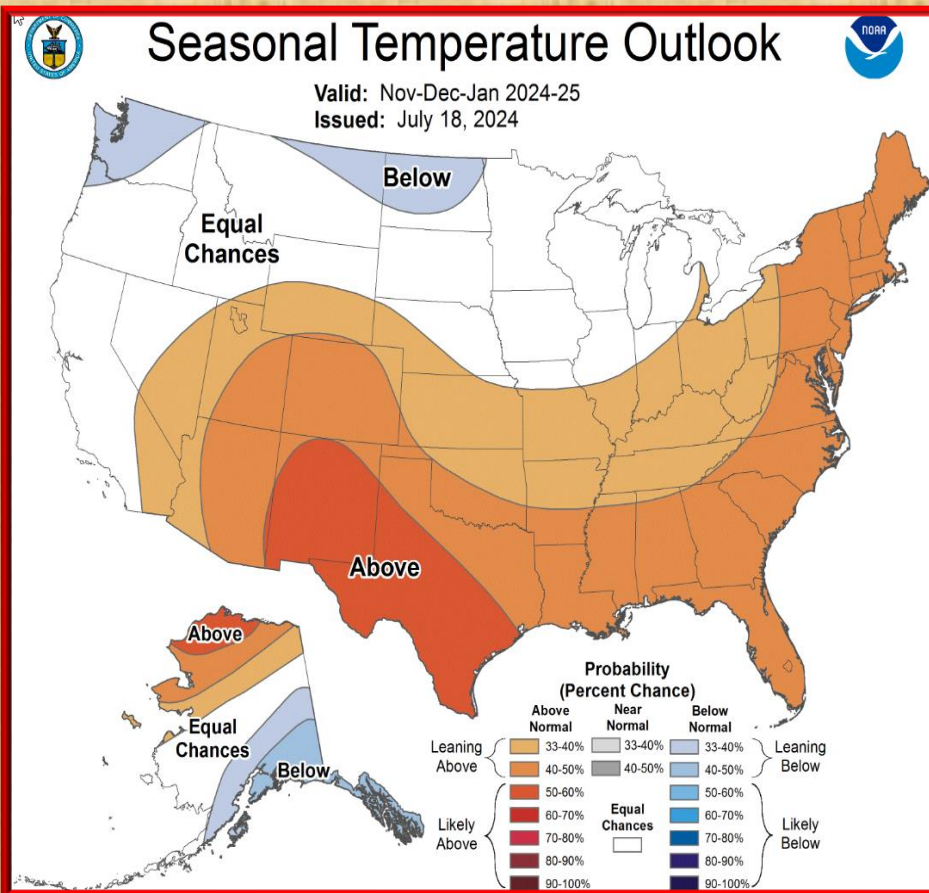




# Temperature and precipitation outlook for Nov-Jan 2025

## Temperature

## Precipitation

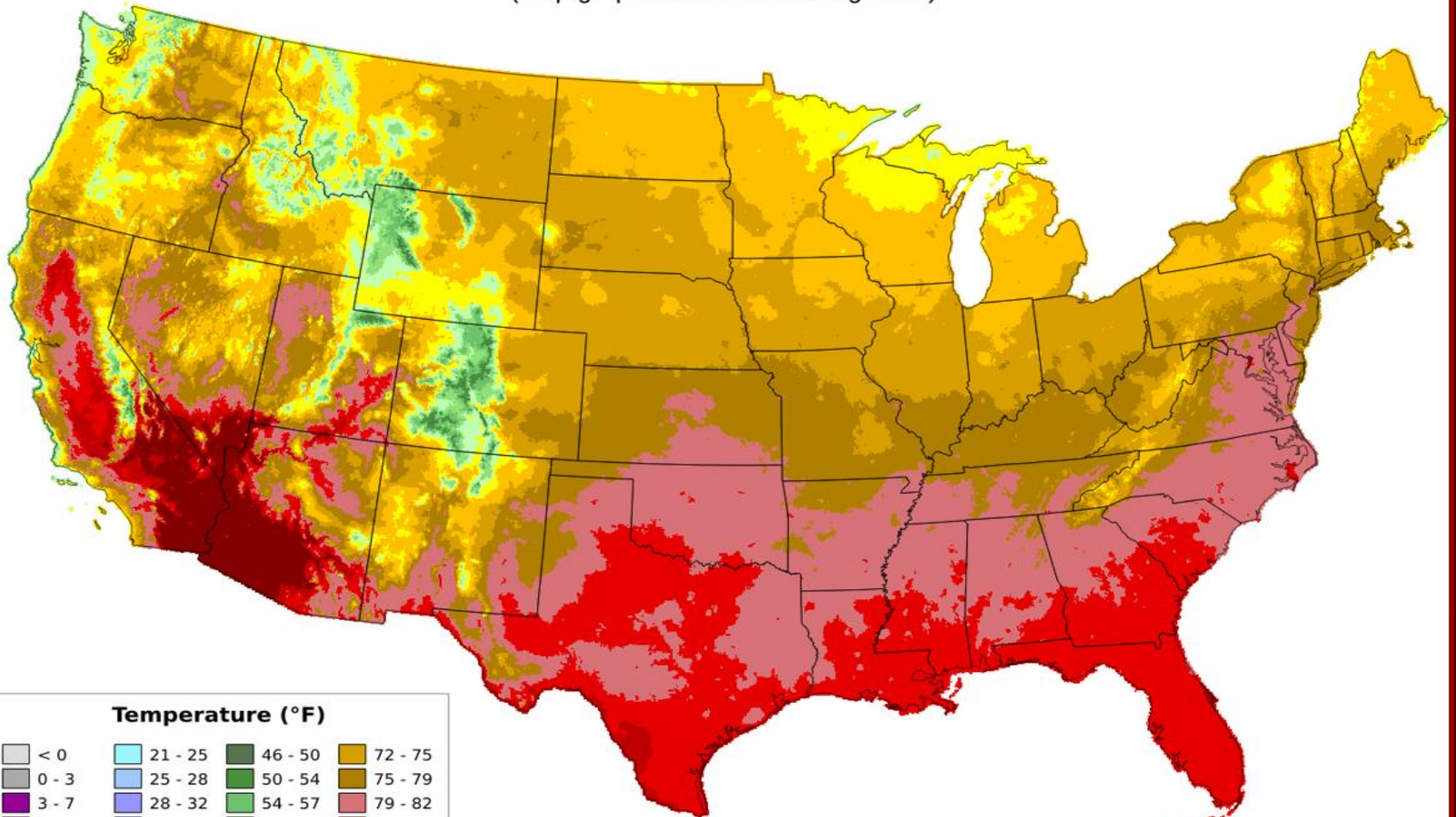


# Average Daily Mean Temperature for July 2024

Average Daily Mean Temperature: 01 Jul 2024 - 31 Jul 2024

Period ending 7 AM EST 31 Jul 2024

(Map graphics created 01 Aug 2024)



## Temperature (°F)

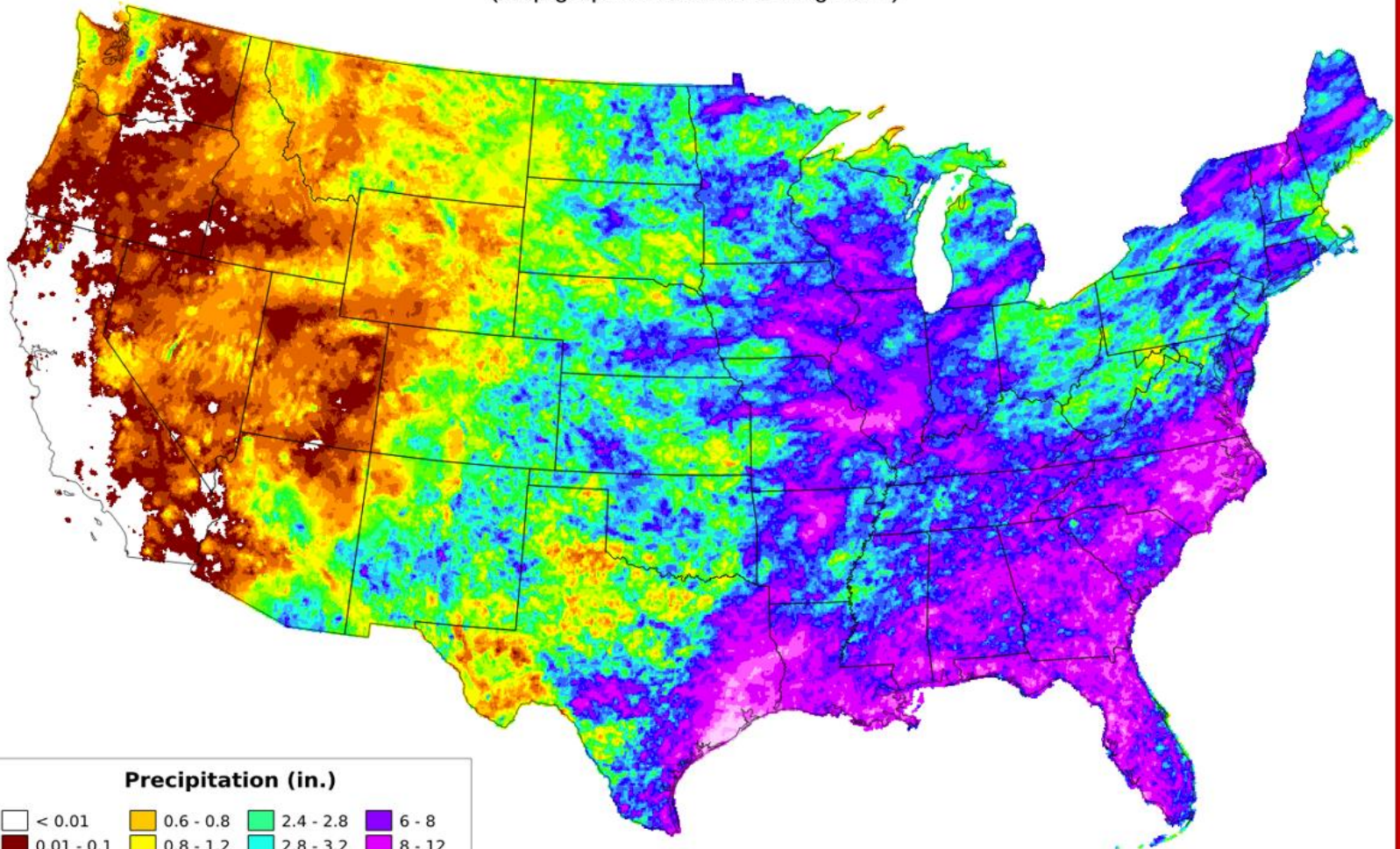
< 0	21 - 25	46 - 50	72 - 75
0 - 3	25 - 28	50 - 54	75 - 79
3 - 7	28 - 32	54 - 57	79 - 82
7 - 10	32 - 36	57 - 61	82 - 86
10 - 14	36 - 39	61 - 64	86 - 90
14 - 18	39 - 43	64 - 68	> 90
18 - 21	43 - 46	68 - 72	

# Total Precipitation for July 2024

Total Precipitation: 01 Jul 2024 - 31 Jul 2024

Period ending 7 AM EST 31 Jul 2024

(Map graphics created 01 Aug 2024)



## Precipitation (in.)

< 0.01	0.6 - 0.8	2.4 - 2.8	6 - 8
0.01 - 0.1	0.8 - 1.2	2.8 - 3.2	8 - 12
0.1 - 0.2	1.2 - 1.6	3.2 - 4	12 - 16
0.2 - 0.4	1.6 - 2	4 - 5	16 - 20
0.4 - 0.6	2 - 2.4	5 - 6	> 20



Local forecast by "City, St" or ZIP code  
 Enter location ...   
[Location Help](#)

**Heavy Rain and Flash Flooding Possible Over Parts of the Eastern United States**  
 Heavy rainfall is expected over portions of the eastern United States through Thursday. Flooding and flash flooding will be possible in some areas. Click the "Read More" link for excessive rainfall forecasts from the Weather Prediction Center. [Read More >](#)

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**NWS El Paso**  
[Weather.gov > El Paso, TX](#)

El Paso, TX  
 Weather Forecast Office

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**Today**

**Wednesday**  
 Warmer with a Few Afternoon Storms  
 Weather Forecast Office  
 El Paso, TX  
 September 27, 2016 4:43 PM

Local forecast by "City, St" or ZIP code  
 Enter location ...   
[Location Help](#)

**Heavy rain expected across the Mid-Atlantic region and central Appalachians.**  
 Heavy rainfall is possible over portions of the eastern United States today, with the highest risk across the Mid-Atlantic and central Appalachians. Click the "Read More" link for excessive rainfall forecasts from the Weather Prediction Center. Afternoon showers and thunderstorms are possible over portions of the Southwest and southern Rockies through Friday. [Read More >](#)

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[Weather.gov > El Paso, TX > Monthly Weather Digest](#)

El Paso, TX  
 Weather Forecast Office

Current Hazards   Current Conditions   Radar   Forecasts   Rivers and Lakes   Climate and Past Weather   **Local Programs**

Southern New Mexico and Far West Texas has a variety of weather from month to month. Conditions can range from extreme drought, to heavy flooding rains, from record breaking heat to bone chilling cold. Below you will find past weather highlights from the area that the NWS office in Santa Teresa NM covers. This area includes the following counties in New Mexico: Hudspeth, Grant, Luna, Sierra, Doña Ana and Otero and the following counties in Texas: El Paso and Hudspeth.

weather.gov/epz

WEATHER DIGESTS AND BULLETINS	
Weather Digest	Southwest Weather Bulletins
<a href="#">January</a>	2005 <a href="#">Spring</a> <a href="#">Fall</a>
<a href="#">February</a>	2006 <a href="#">Spring</a> <a href="#">Fall</a>
<a href="#">March</a>	2007 <a href="#">Spring</a> <a href="#">Fall</a>
<a href="#">April</a>	2008 <a href="#">Spring</a> <a href="#">Fall</a>
<a href="#">May</a>	2009 <a href="#">Spring</a> <a href="#">Fall</a>
<a href="#">June</a>	2010 <a href="#">Spring</a> <a href="#">Fall</a>
<a href="#">July</a>	2011 <a href="#">Spring</a> <a href="#">Fall</a>
<a href="#">August</a>	2012 <a href="#">Spring</a> <a href="#">Fall</a>
<a href="#">September</a>	2013 <a href="#">Spring</a> <a href="#">Fall</a>
<a href="#">October</a>	2014 <a href="#">Spring</a> <a href="#">Fall</a>
<a href="#">November</a>	
<a href="#">December</a>	

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**Just click on "Local Programs>Weather Digest", then choose which month's Digest to view. Also, though discontinued, don't forget to check out our back issues of Southwest Weather Bulletin.**