
September 2020
Weather Digest

September 2020 Weather Summary

September continued the overall dry summer trend across the area, with drought conditions worsening as a result. The majority of the month saw above normal temperatures. However, two strong early season cold fronts pushed in from the east. The first one on the 8th/9th dropped temperatures some 25-30 degrees from the previous day with the cool period lasting about 4 days. The second cold front pushed through on the 28th, dropping temperatures about 20-25 degrees from the previous day. This cool period lasted 3 days. Because of these two strong cold fronts, average temperatures ended up near normal. This was due in large part to average low temperatures ending up below normal. The two cold fronts also brought most of the weather to September. The cold front of the 8th/9th brought some heavy rain to several areas, and also large hail to the Holloman AFB/Alamogordo area. The cold front of the 28th brought gusty east winds with it and very strong gusts along west slopes of mountains.

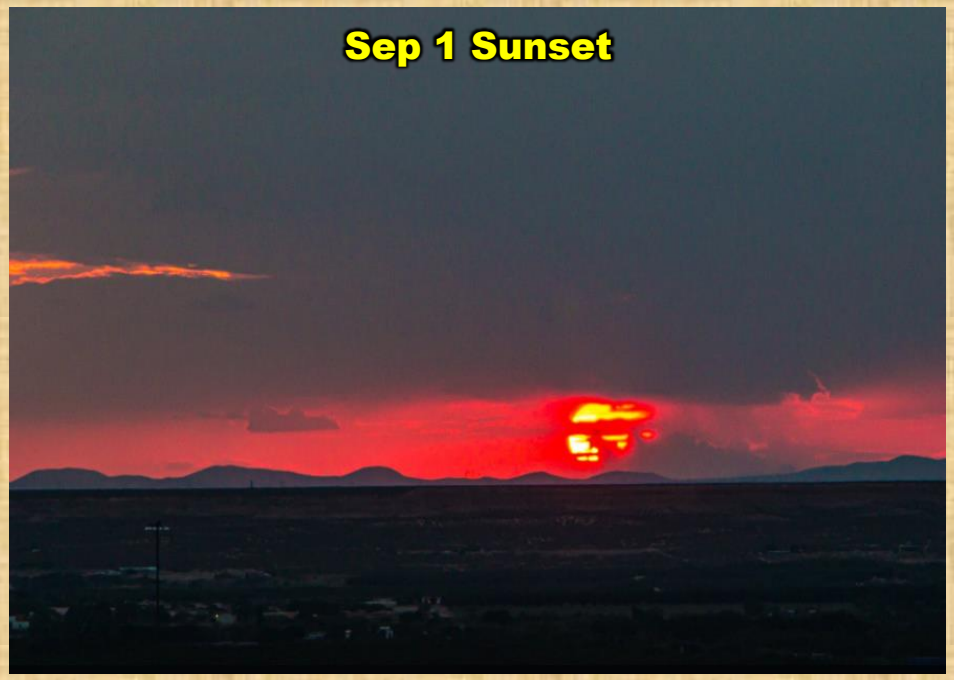
Dry was the operative word for September as most of the area received about 10-50 percent of the normal rainfall. A distinct band extending from just west of Deming across the Uvas Valley and up to northwest Otero County did receive heavy rain, anywhere from 4 to 7 inches of rain. Due to this lack of

September 2020 Weather Summary, cont'd

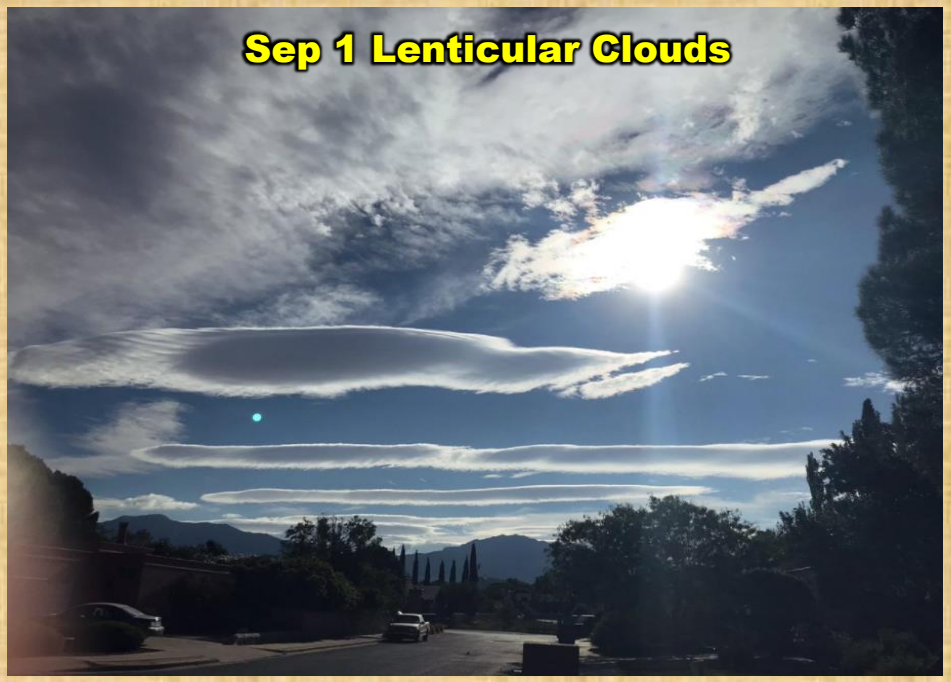
rain, moderate to severe drought conditions have developed over much of the area. With a La Nina pattern expected to strengthen this winter, the prospects for any improvement in these drought conditions looks pretty doubtful, and in fact the drought may worsen through the winter.

Looking ahead to October, temperature decreases will continue with the waning daylight hours. The average high temperature at El Paso on the first is 83 degrees and down to 73 degrees on the final day of October. Daylight continues to decrease, from 11 hours and 50 minutes on the first to 10 hours and 54 minutes on the 31st. For you lunar fans, October is the month this year where we have two full moons; one on the first and one on the 31st. The full moon on the first is known as a Micromoon, which is a full moon farthest away from the earth, referred to as the apogee.

Sep 1 Sunset



Sep 1 Lenticular Clouds



Sep 8 Smoke/Dust in Las Cruces


Sep 9 Flooding in Deming
15 FT 10 IN


Sep 9 Flooding in Deming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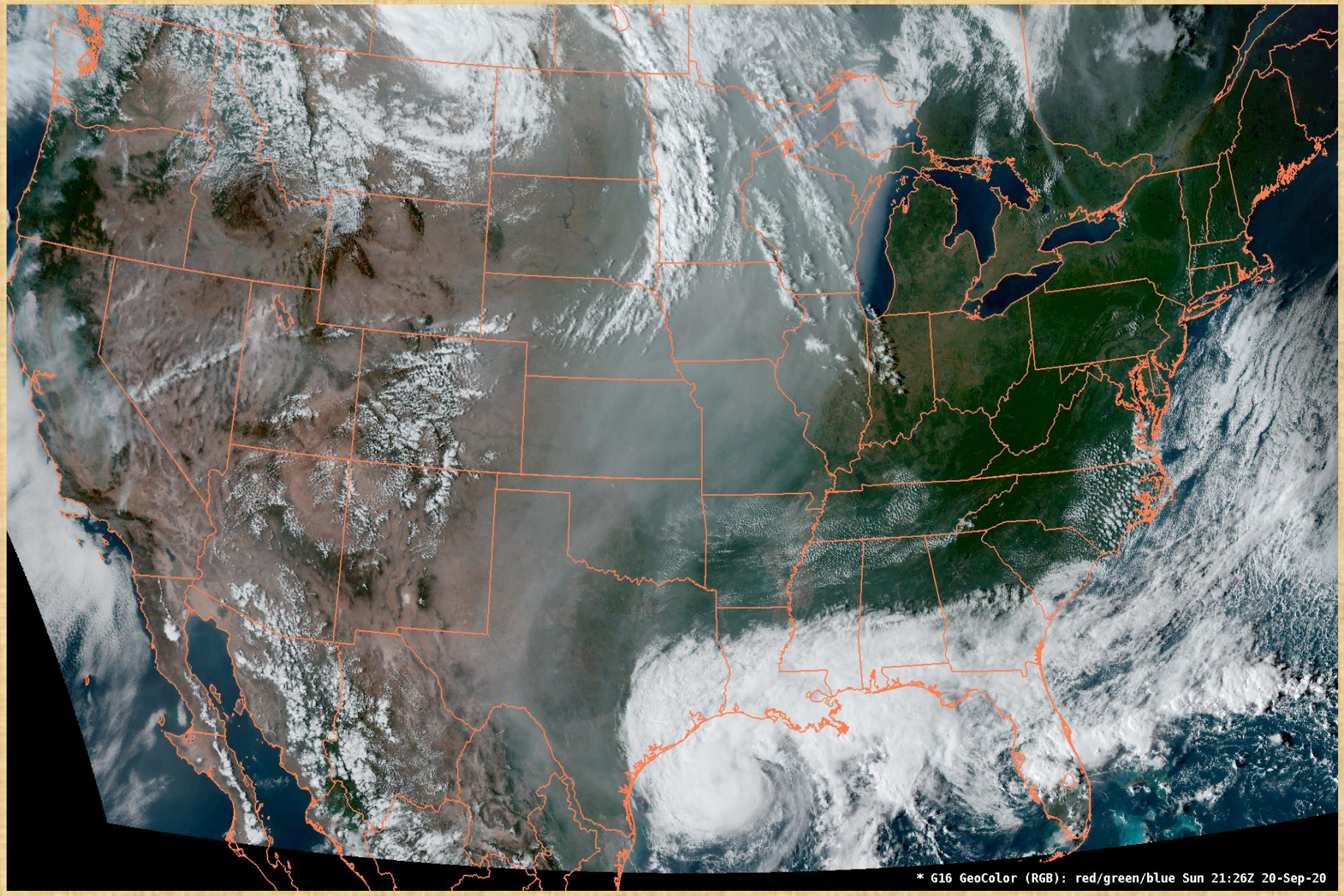
Sep 9 Flooding in Deming

Early season strong cold front of September 8th and its impacts on the region

Sep 20 Wildfire smoke from the west coast loops around through the midwest and back down to New Mexico



ENSO Alert System Status: La Niña Advisory

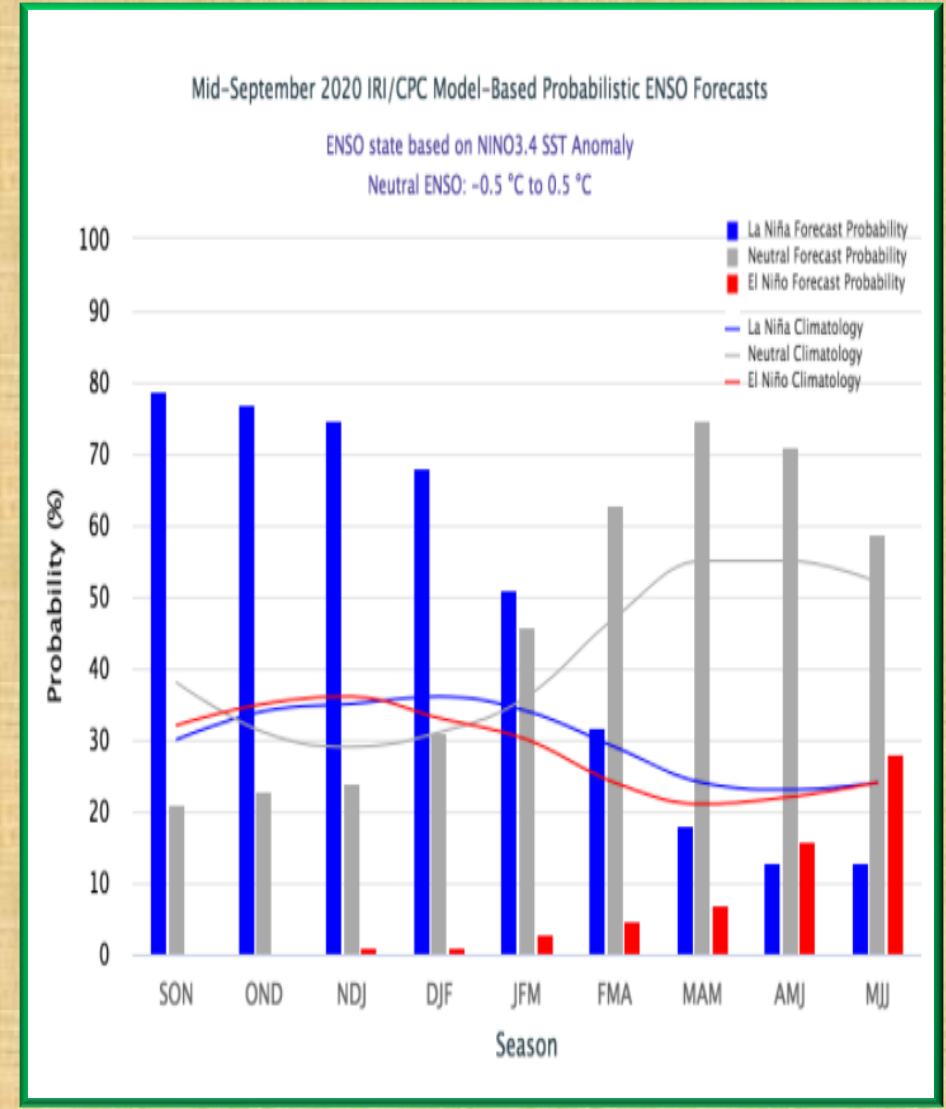
ENSO Alert System

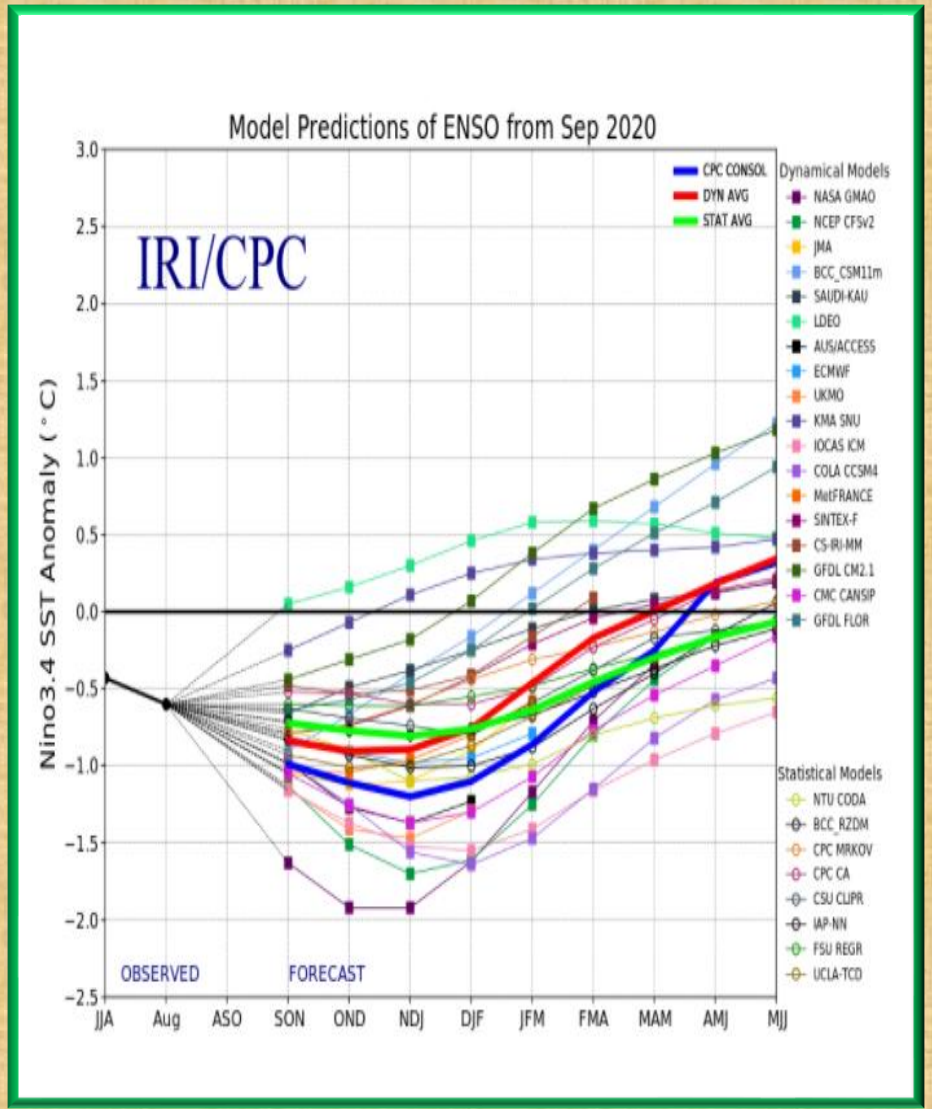
- El Niño or La Niña Watch: Issued when conditions are favorable for the development of El Niño or La Niña conditions in the next six months.

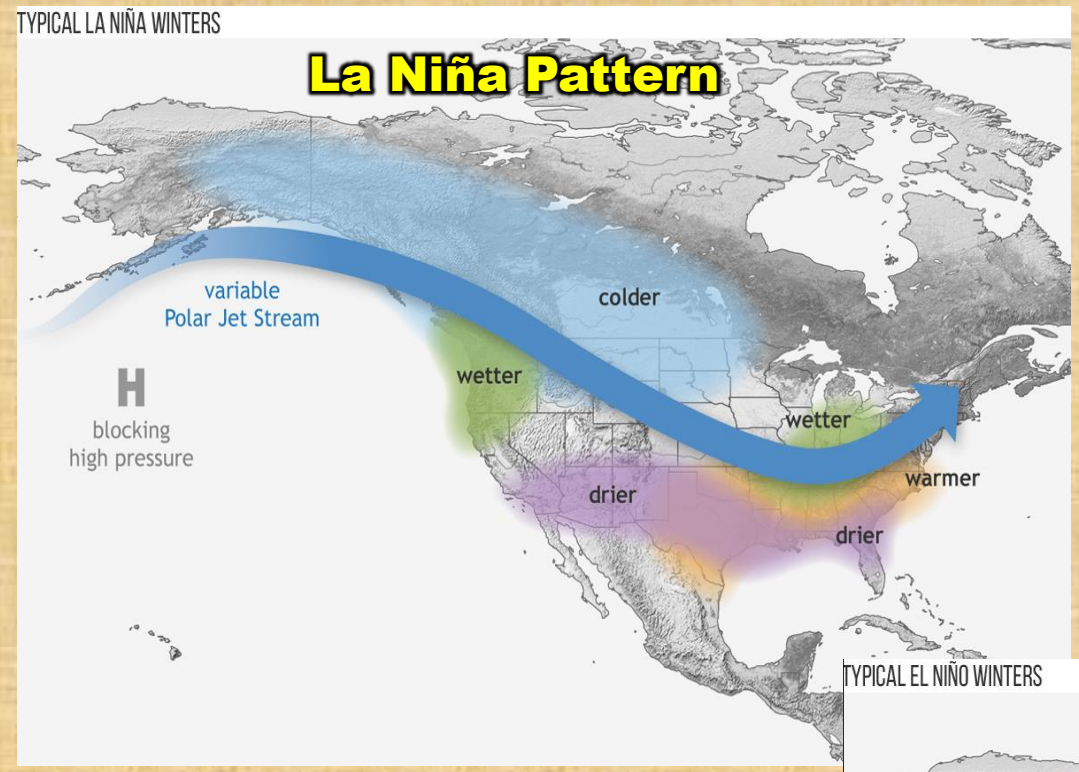
- El Niño or La Niña Advisory: Issued when El Niño or La Niña conditions are observed and expected to continue.

ENSO Forecast

ENSO is now in a weak La Niña phase; could increase to moderate strength by mid winter.

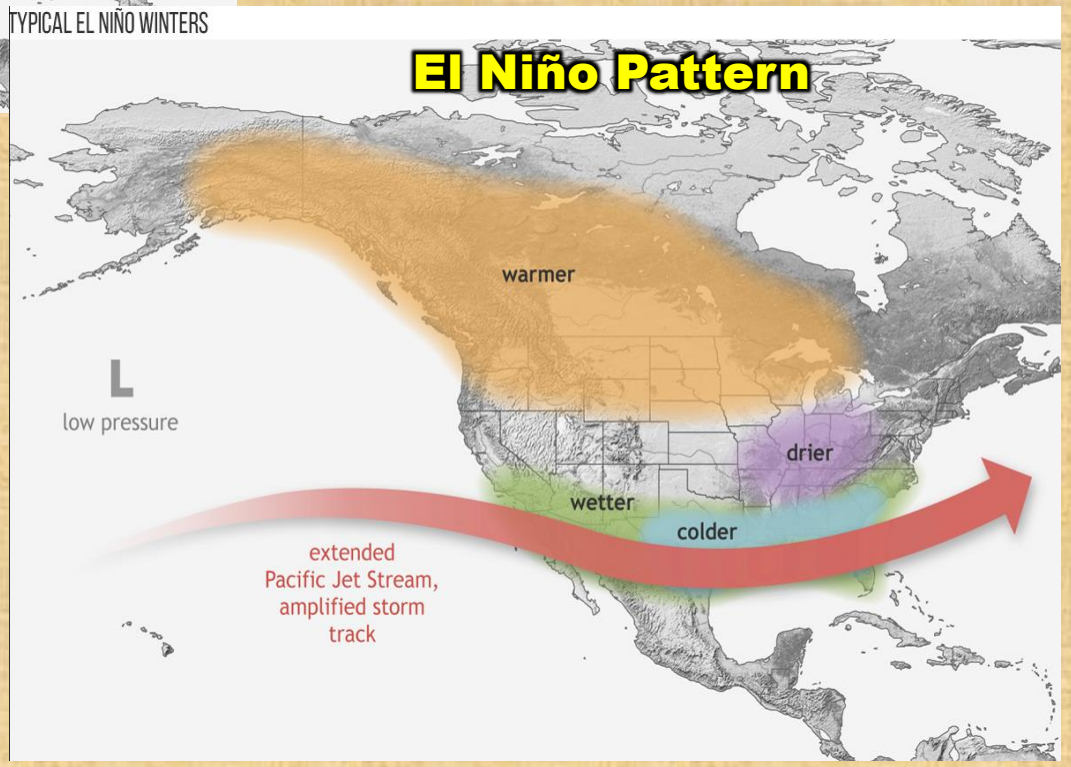


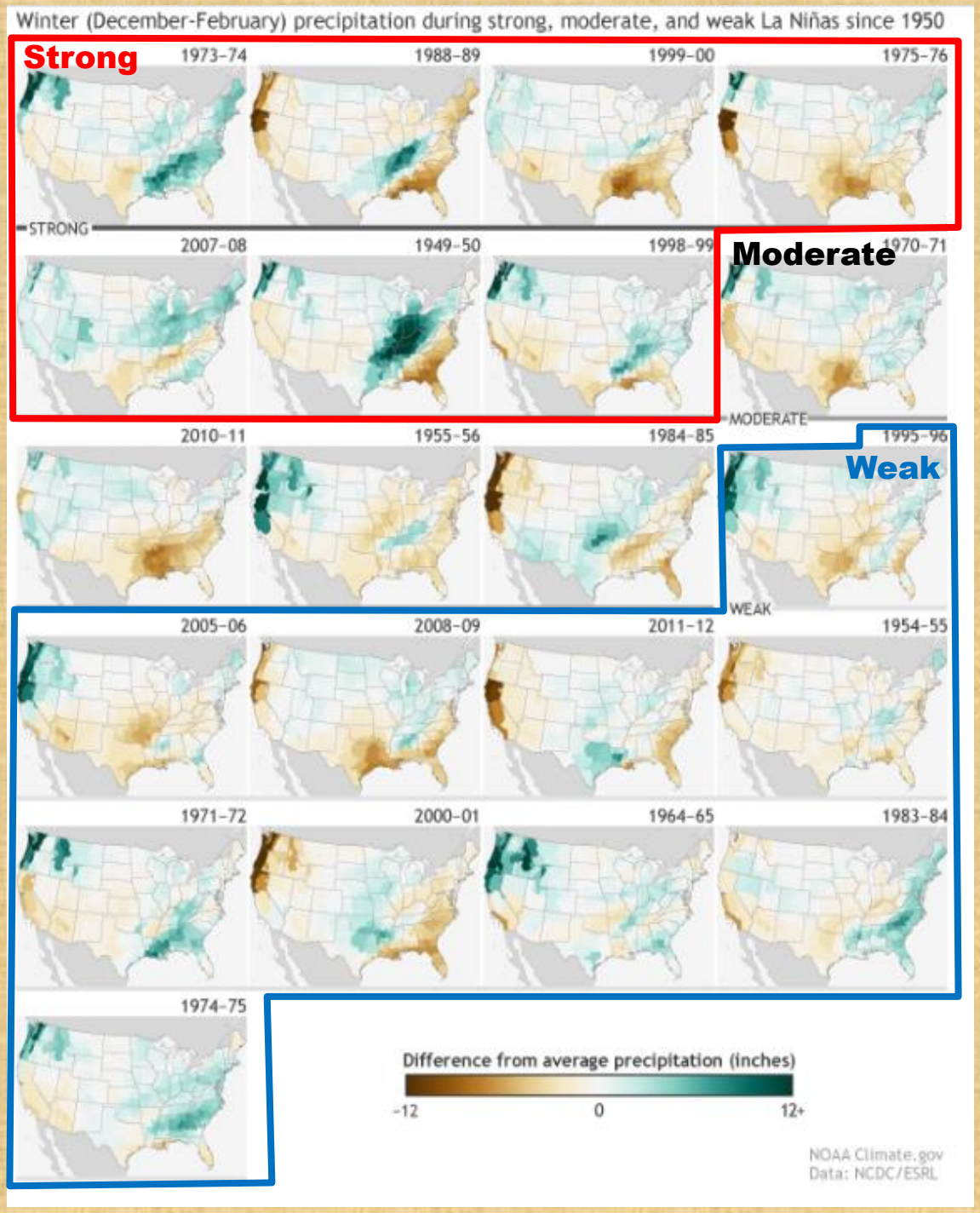




We are heading into a weak to moderate La Niña for much of this winter. As the pattern shows, a ridge of high pressure tends to build off the west coast of the U.S., blocking most of our Pacific winter storm systems. These storms tend to end up moving across the southeastern part of the country. Of course it is important to remember that these patterns are only what typically happens and are not guaranteed to occur.

With El Niño, we often see the opposite pattern where the eastern Pacific ridge of high pressure 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.



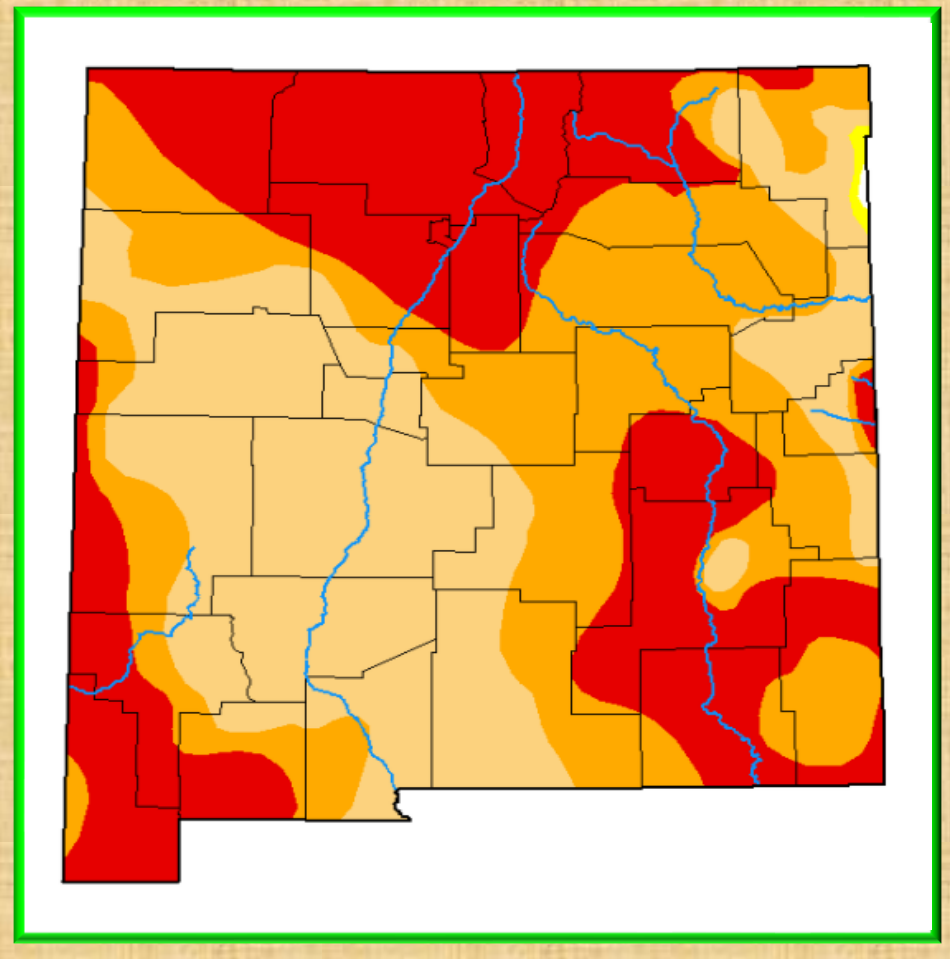


Examples of the numerous La Niña winters since 1950. These maps depict the departure from normal precipitation amounts for a winter.

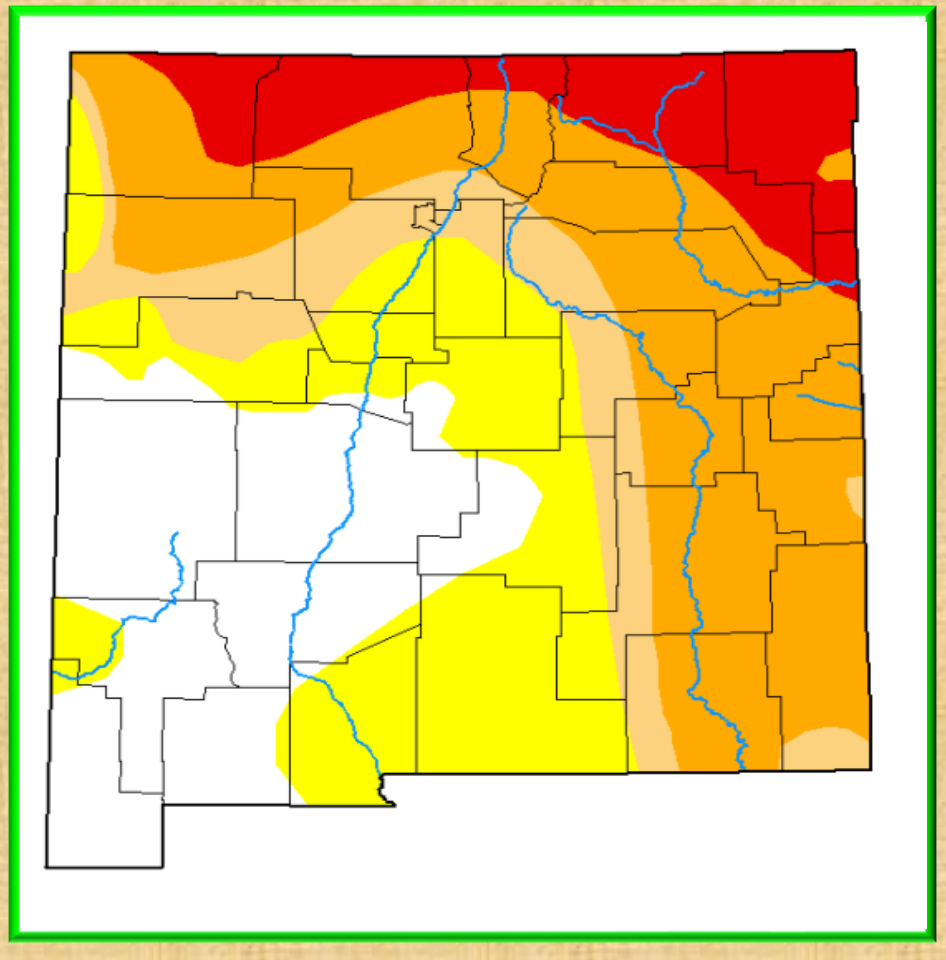
Current drought conditions for New Mexico and 3 month change

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

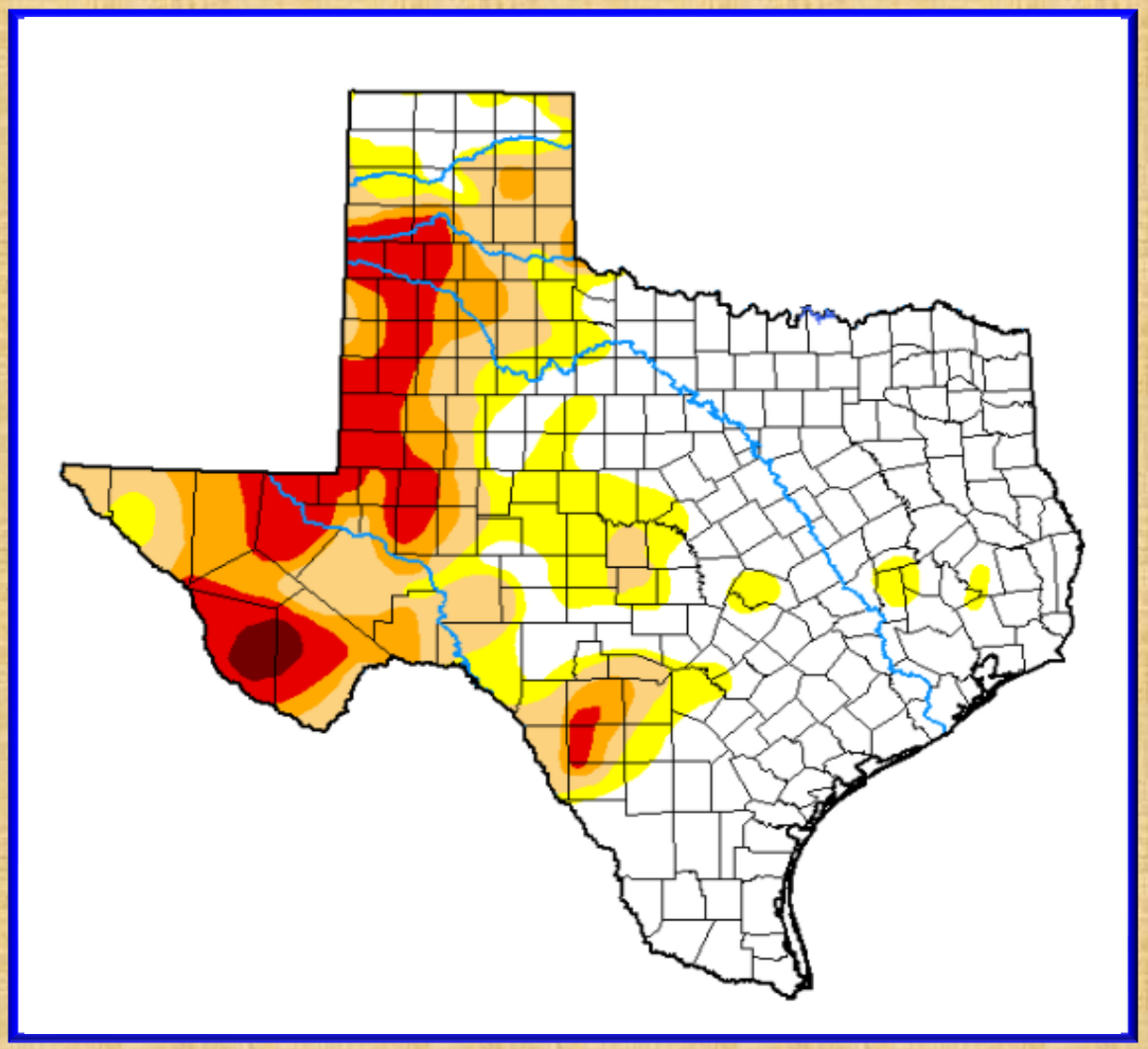
September 22, 2020



June 30, 2020



Current drought conditions for Texas as of September 22, 2020



Intensity:

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

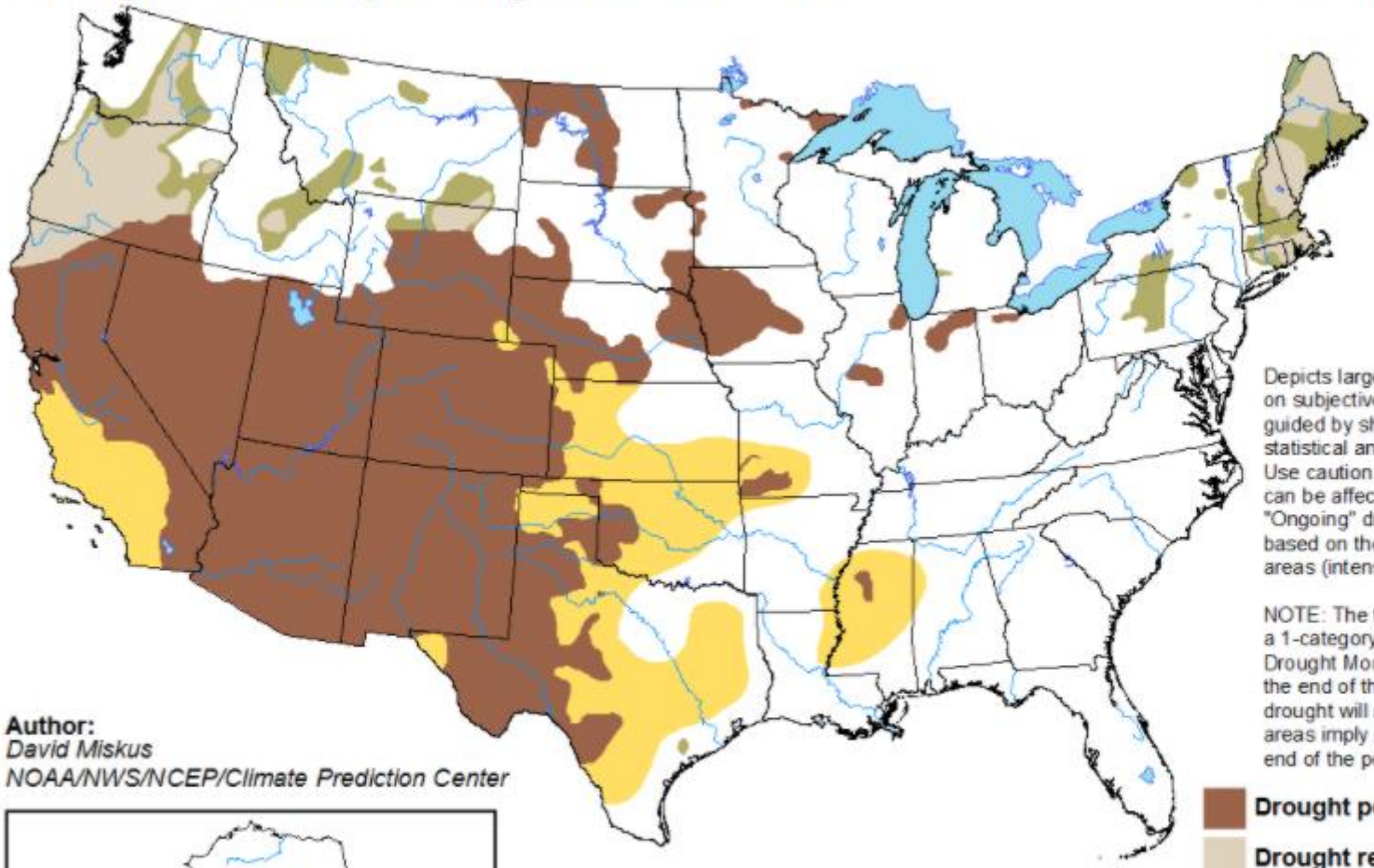
Build your own custom slider maps here at:

http://droughtmonitor.unl.edu/Maps/ComparisonSlider.aspx

U.S. Seasonal Drought Outlook

Drought Tendency During the Valid Period

Valid for September 17 - December 31, 2020
Released September 17

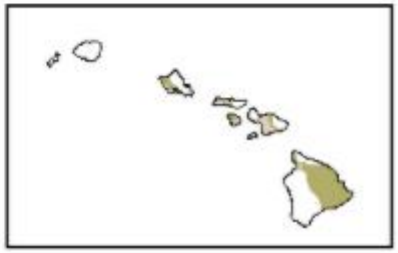


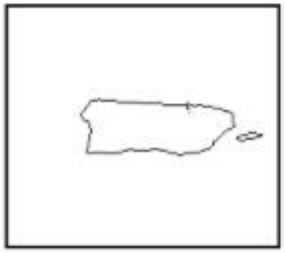
Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short lived events. "Ongoing" drought areas are based on the U.S. Drought Monitor areas (intensities of D1 to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

Author:
David Miskus
NOAA/NWS/NCEP/Climate Prediction Center

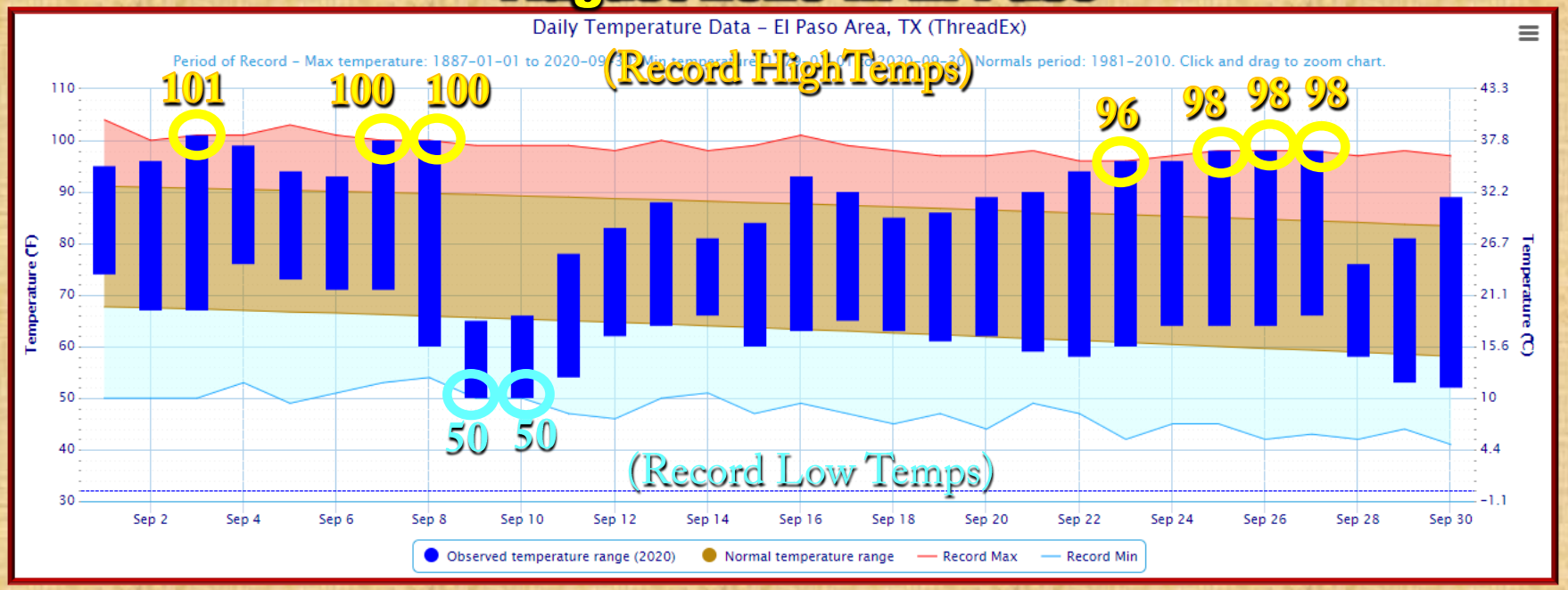


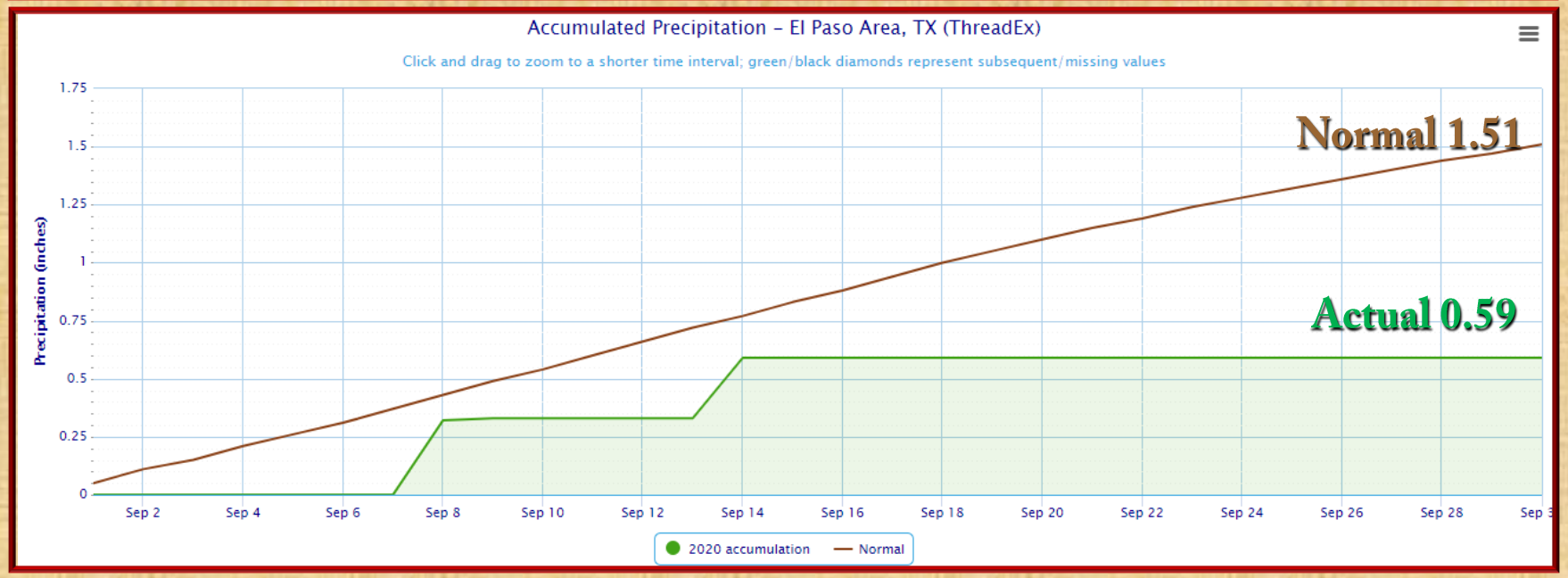


http://go.usa.gov/3eZ73

Temperature and precipitation data for August 2020 in El Paso

= record





Tracking the 2020 Monsoon Season across the El Paso Forecast Area

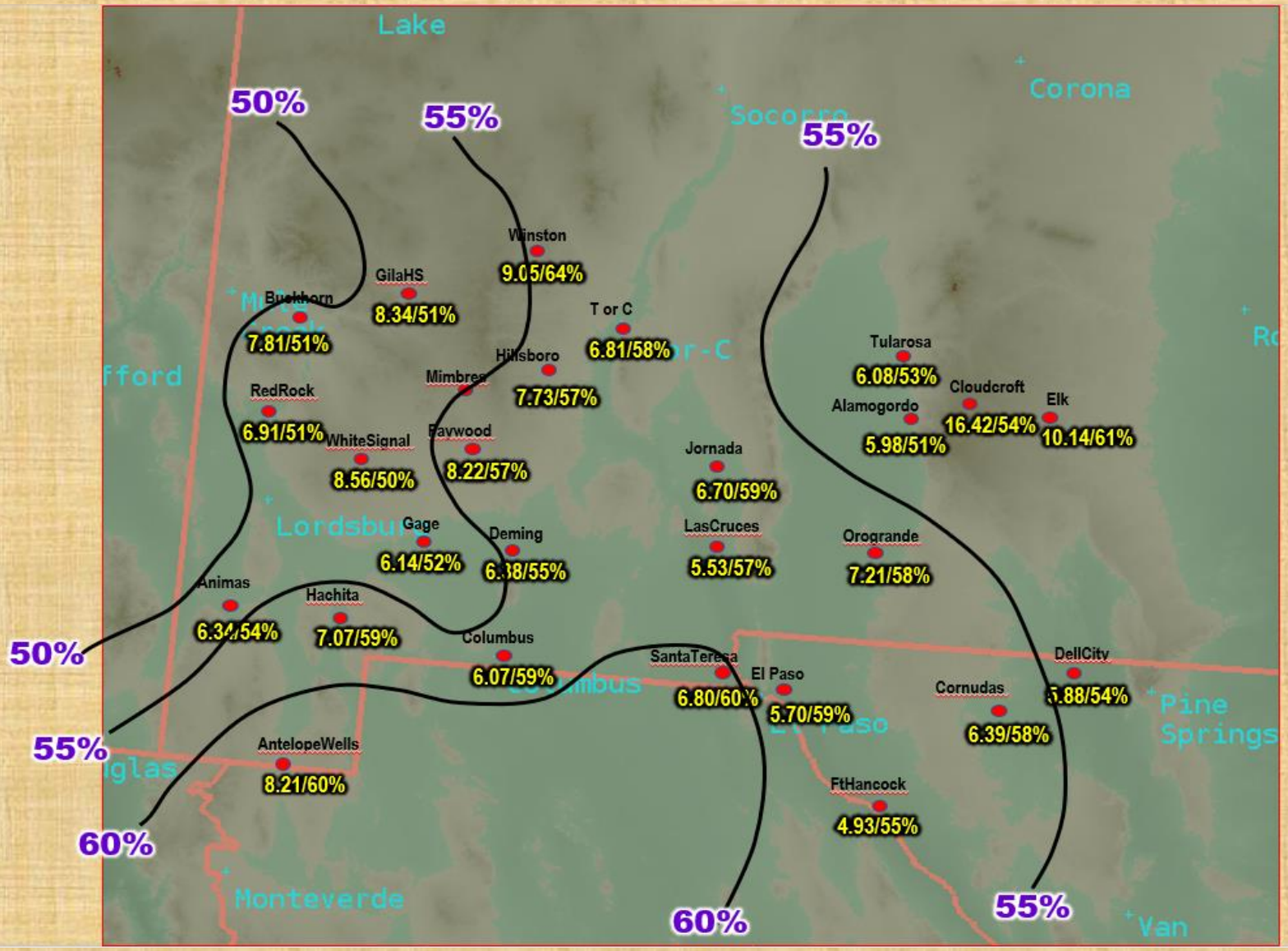
The monsoon season started over northwest Mexico in late June (June 27-30). The monsoon season for New Mexico and far west Texas often follows within one to two weeks of this date. Most of our monsoon ingredients were in place by early July. Looking at the charts below, several research studies have found these values to strongly correlate with the onset of the North American Monsoon (NAM) and/or onset of heavier monsoon precipitation. By July 3, dewpoints in the 50s (Fig. 1) became established over southern New Mexico, and by the next day July 4, sea surface temperatures in the northern Gulf of California (GOC) became predominantly 26C or greater (Fig. 2). Studies have shown that the monsoon usually begins 3-5 days after this warming to 26C. By July 5 the Mexican Monsoon High pressure was centered over northern Mexico and southern New Mexico (Fig. 1), one of the more important factors of the monsoon onset. Thus our monsoon seasonal pattern began in the period from about July 3 to July 7. Of note, studies have shown that before the sea surface temperatures of the northern GOC reach 29C, only about one-third of our monsoon rainfall has occurred. After the 29C is reached, on average, two-thirds of our rain then falls. The 29C criteria was reached on about July 27.

The position of this high will determine rainfall potential for the remainder of the monsoon season (see immediate preceding slide). We often confuse the monsoon ending with the shifting position of the NAM upper high. The basic overall pattern remains the same: mid latitude storm track/jet stream remain well north of our area; broad upper ridge of high pressure extending from Bermuda High west across the Gulf States and over to the Desert Southwest and the eastern Pacific. The key is to where the NAM upper high sets up. Its position is constantly moving, though often remaining in one relative spot for 3-5 days. (Fig. 4)

Tracking the 2020 Monsoon Season (cont'd)

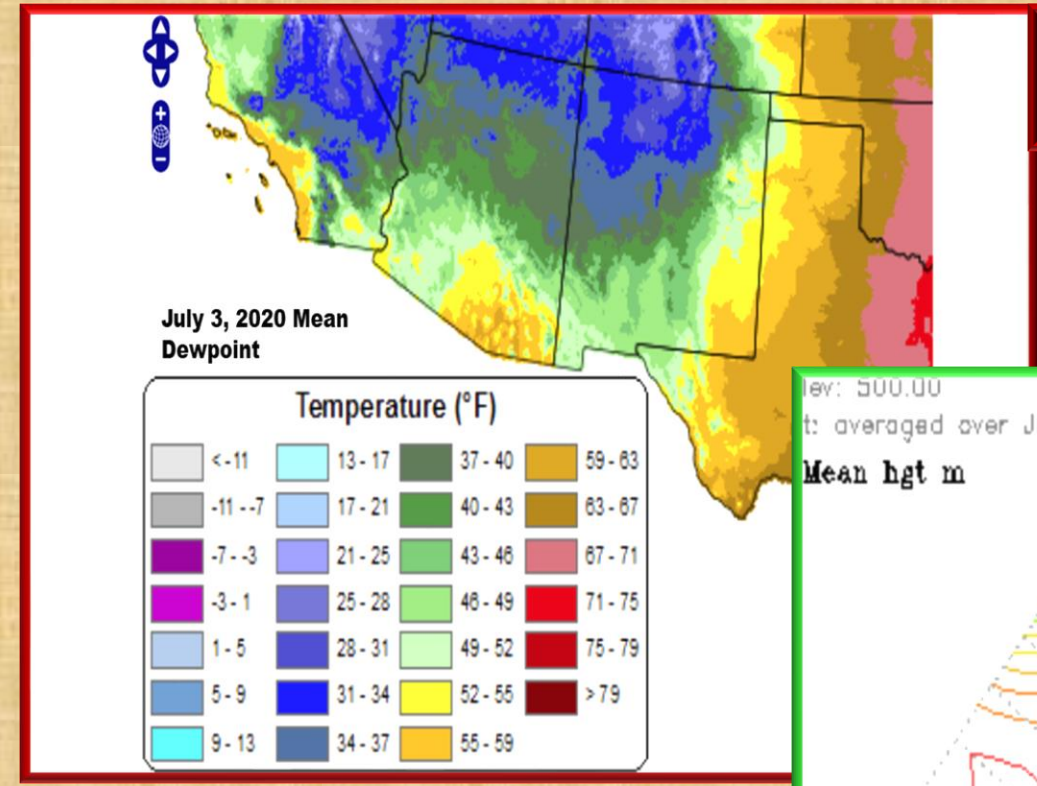
What began as a quiet beginning to the monsoon season with respect to rainfall, has turned into a very poor rainfall season. Drought conditions have worsened, which does not happen often during the summer monsoon season. A good September rainfall could have caught us up to near normal for the season, but the majority of the area once again fell well short of monthly averages. The monsoon pattern, looking at upper flow and dewpoint temperatures at the surface, ended around September 10 to the 15. Widespread rainfall for the area overall was pretty much finished by September 10.

Tracking the 2020 Monsoon Season across the El Paso Forecast Area

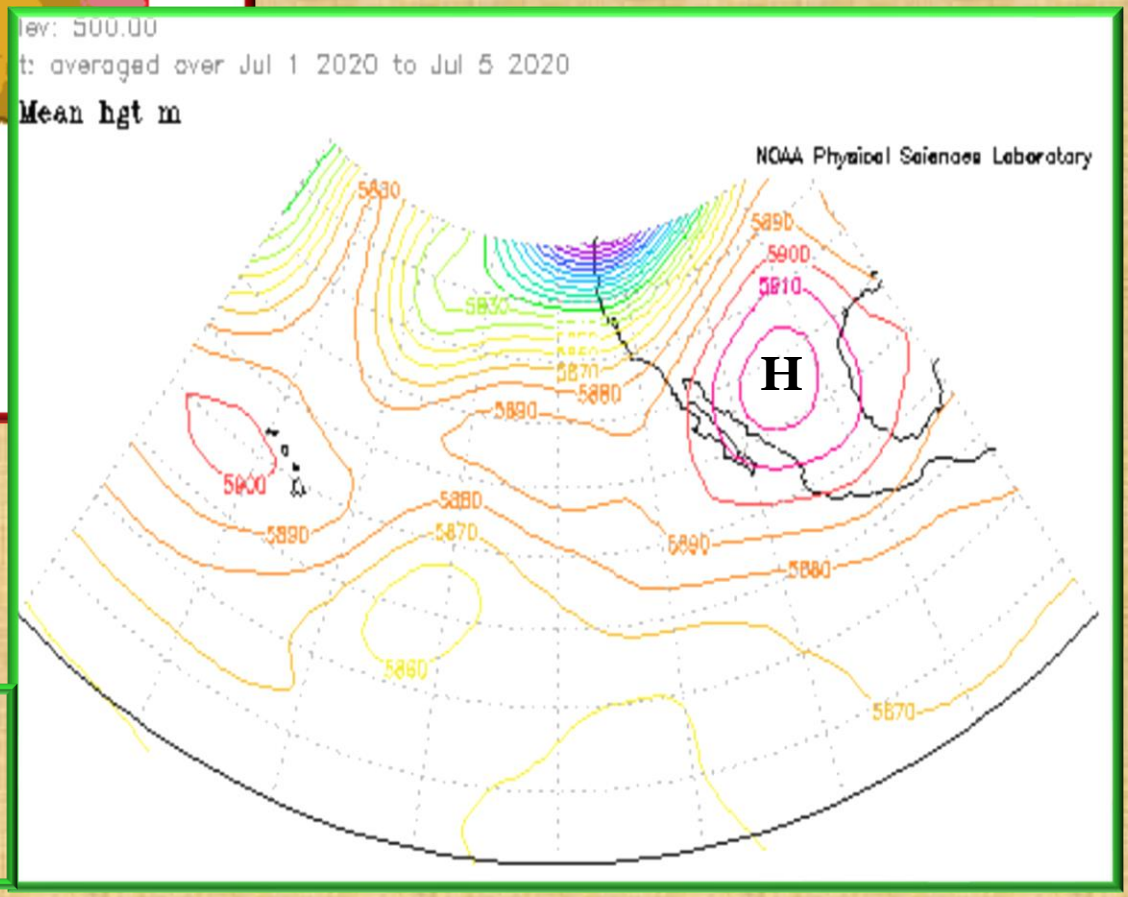


Percent of annual precipitation falling during the monsoon season (Jun15 – Sep 30)

Tracking the 2020 Monsoon Season across the El Paso Forecast Area. Fig 1

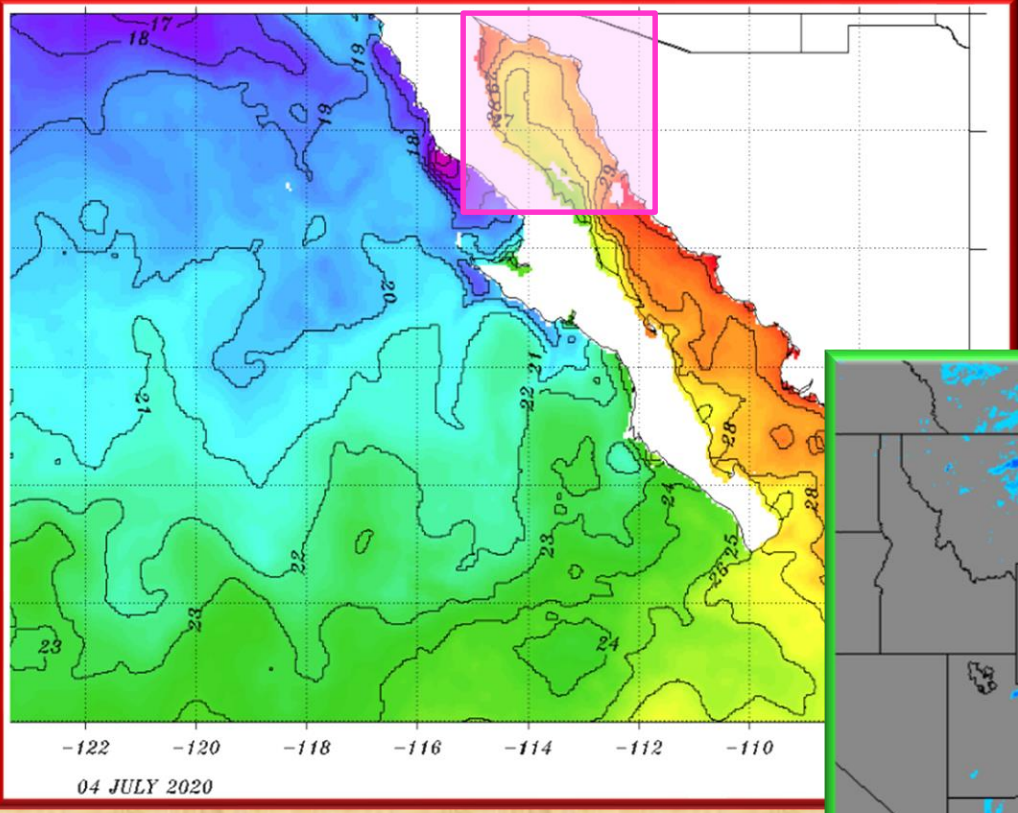


July 3 – Dewpoints reach into the 50s across the area

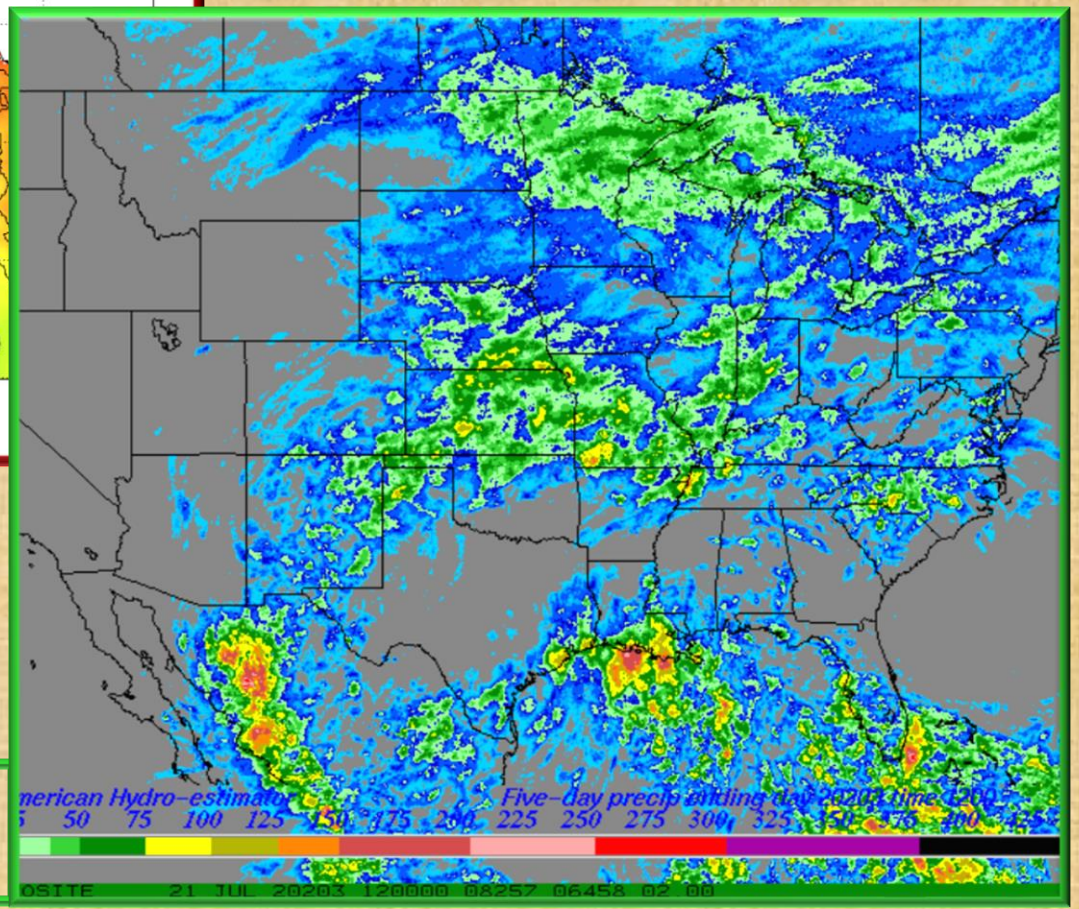


By July 5 North American Monsoon High reaches the Desert Southwest

Tracking the 2020 Monsoon Season across the El Paso Forecast Area. Fig. 2

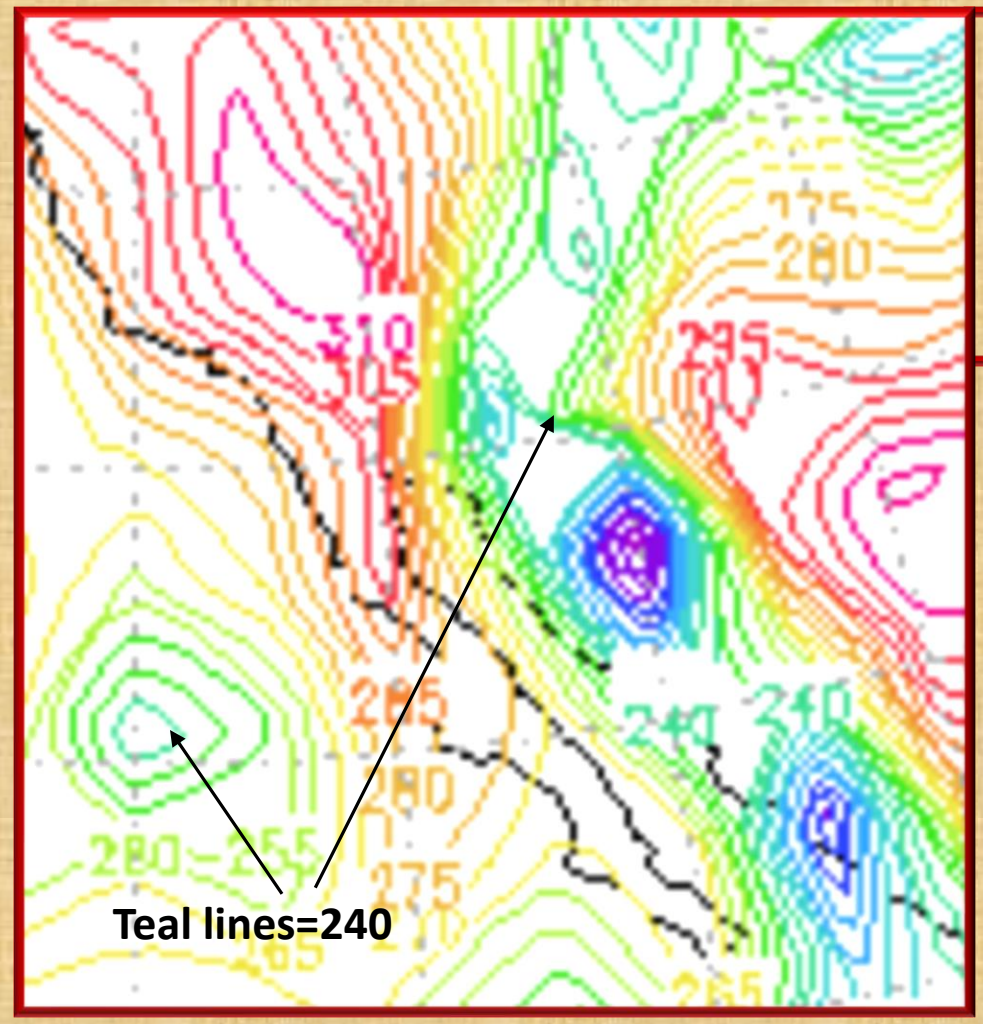


July 4 – Sea surface temperatures in the northern Gulf of California reach 26C deg (79F)



By July 15-20 the first area wide Monsoon precipitation occurs

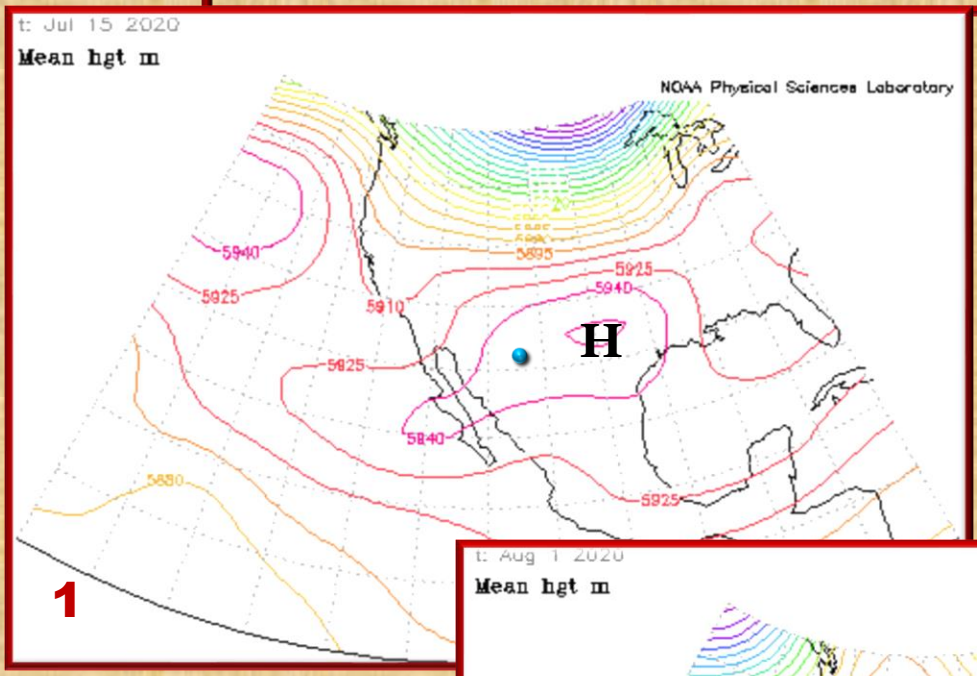
Tracking the 2020 Monsoon Season across the El Paso Forecast Area. Fig. 3

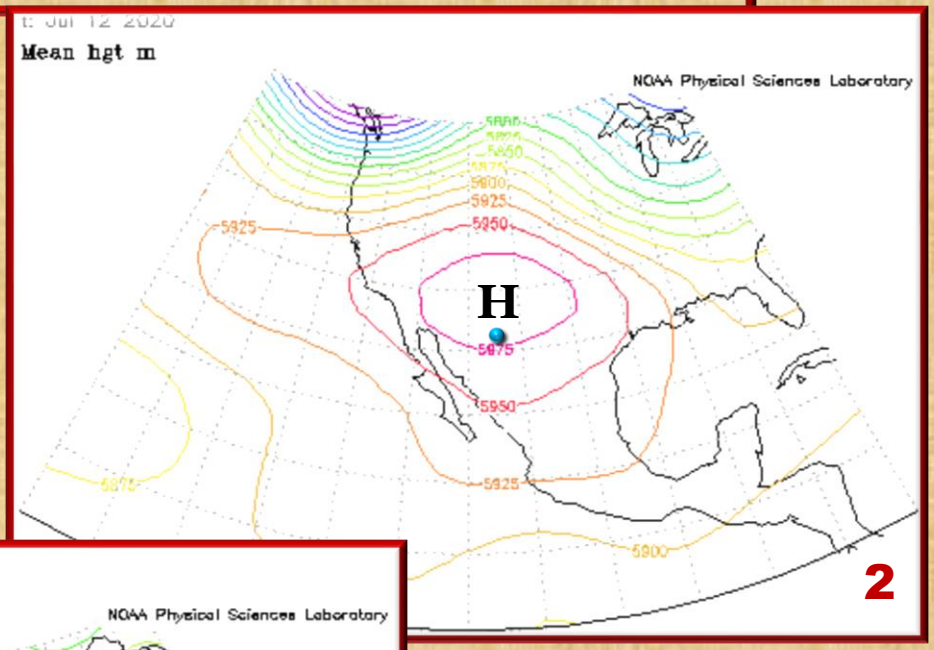


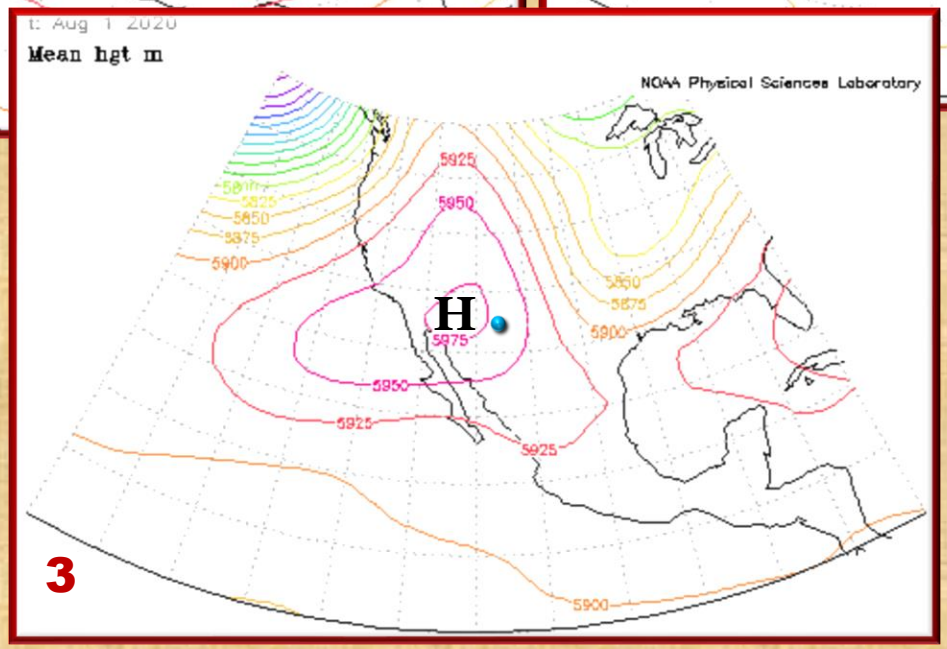
July 13 – Outgoing Longwave Radiation (OLR) diminishes to less than 240 W/m^2 Thick clouds and anvil tops from thunderstorms diminish the OLR values, often indicative of the monsoon moisture and thunderstorms moving into the area.

Tracking the 2020 Monsoon Season across the El Paso Forecast Area. Fig. 4

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





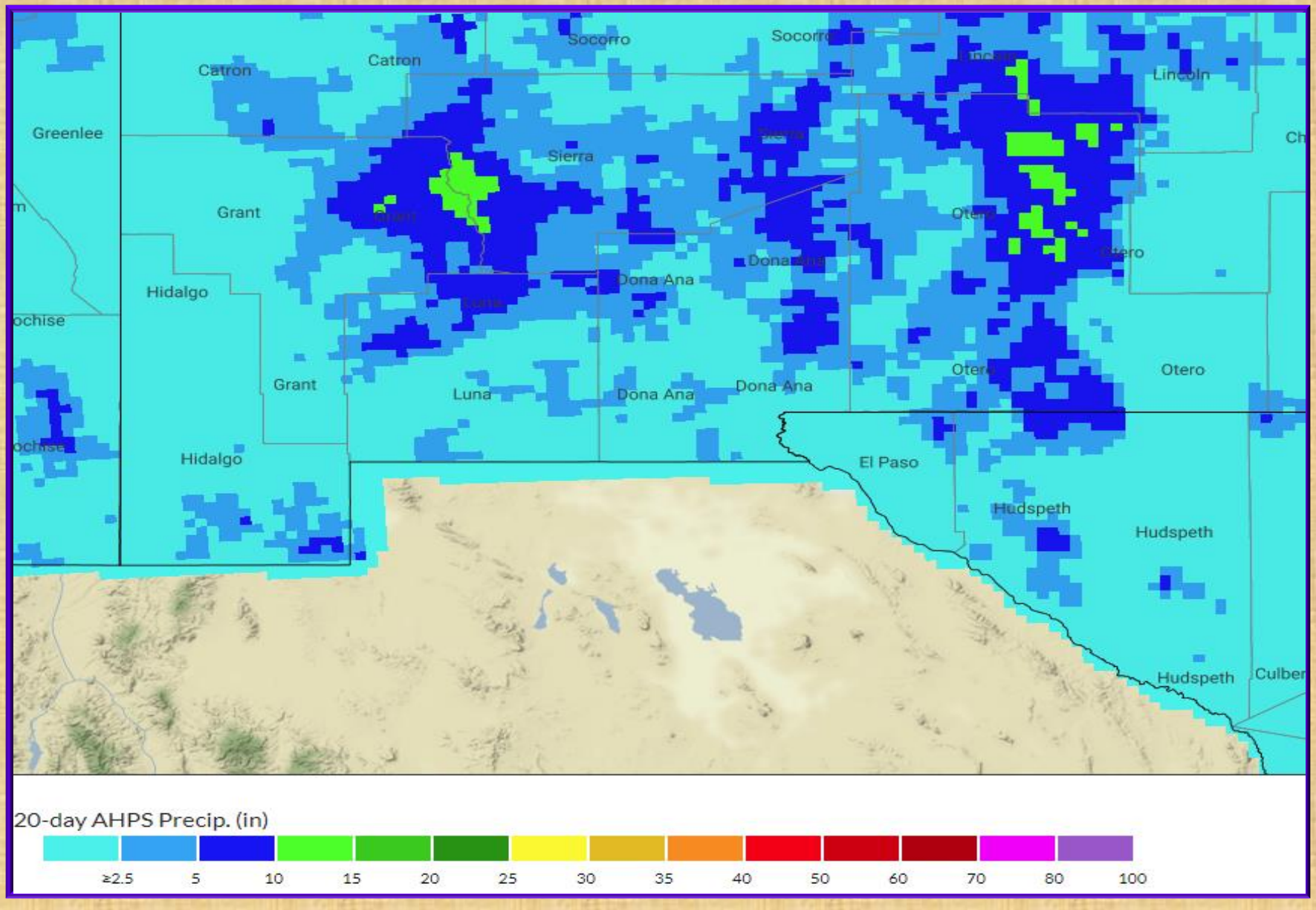


No. 1 High center east of New Mexico. Often brings ample tropical moisture and widespread heavy rain and flooding to the area

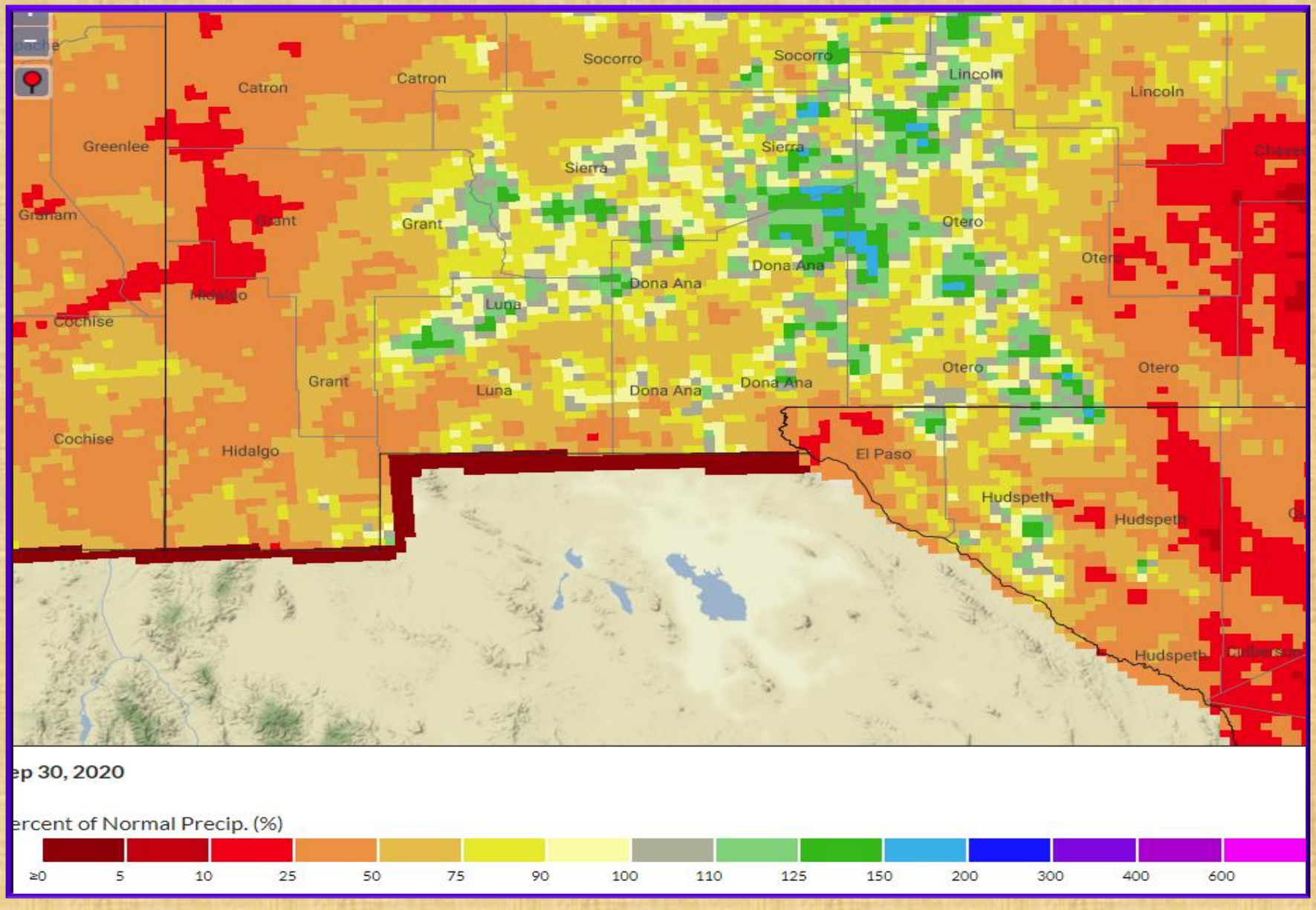
No. 2 High center over New Mexico. Often brings very hot temperatures and little if any rain (usually limited to the mountains).

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

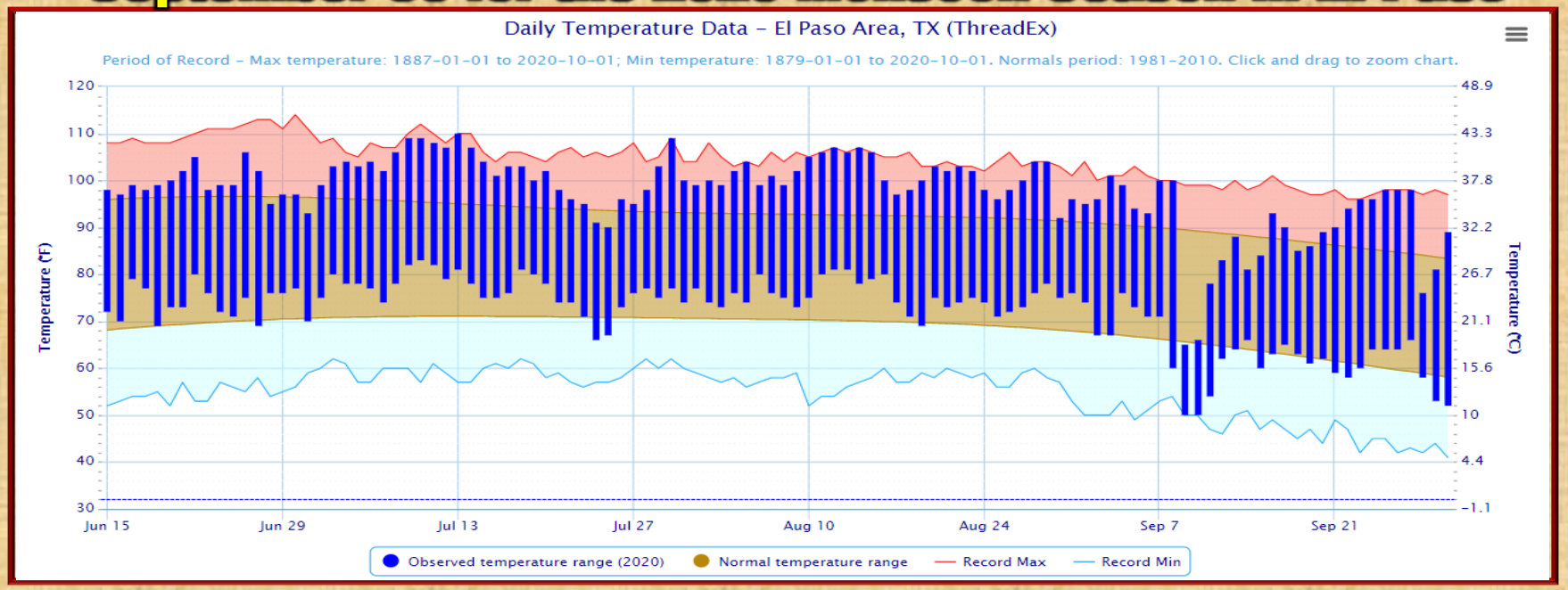
Radar rainfall estimate for the Monsoon Season of 2020

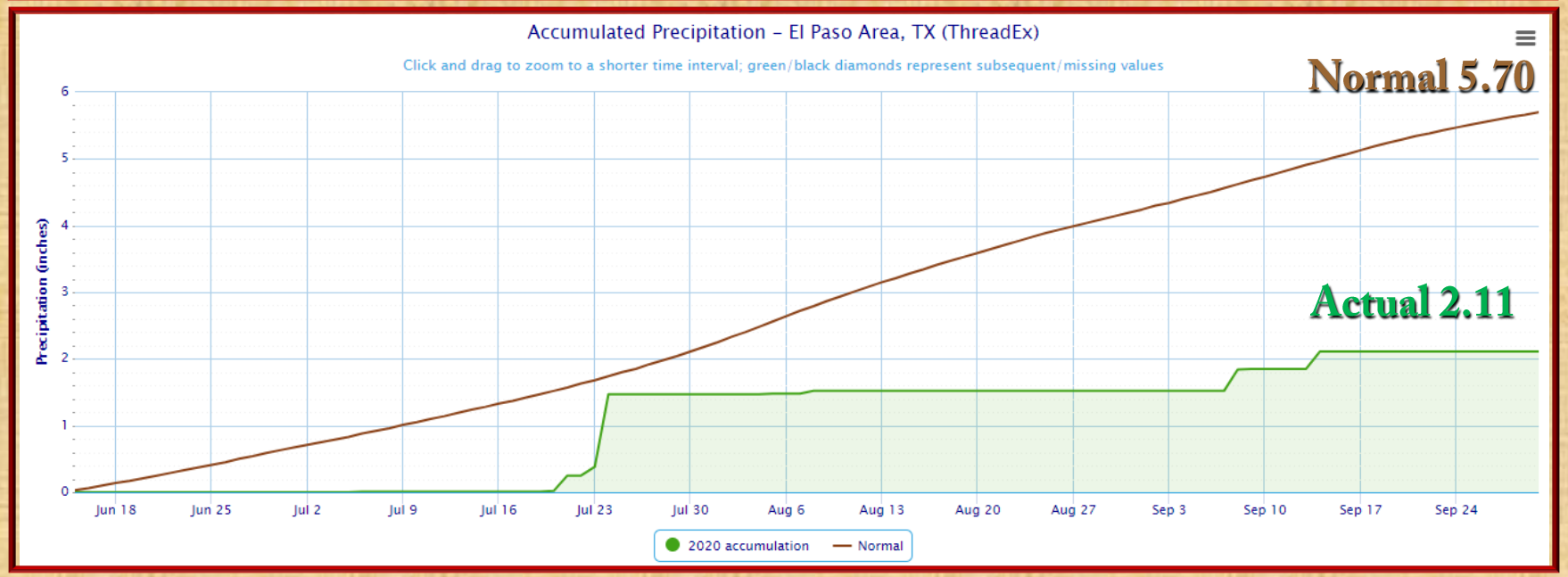


Radar rainfall estimate percent of normal for the Monsoon Season of 2020

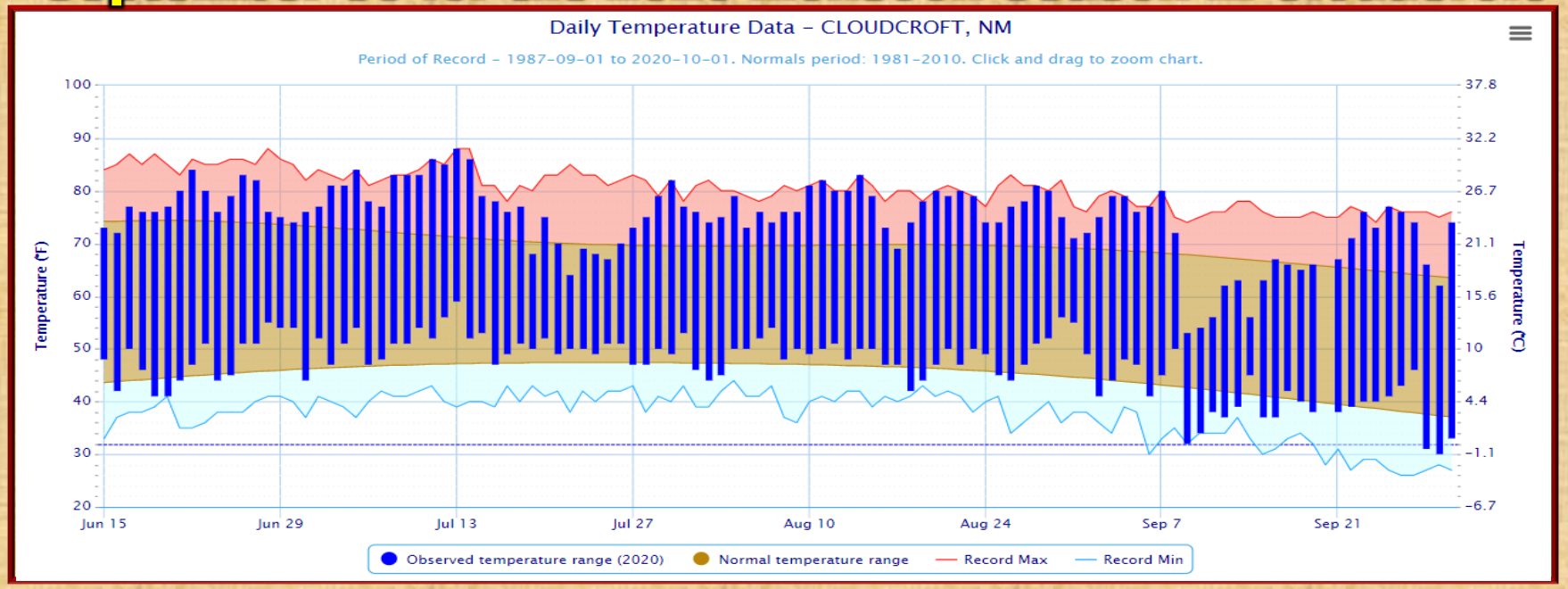


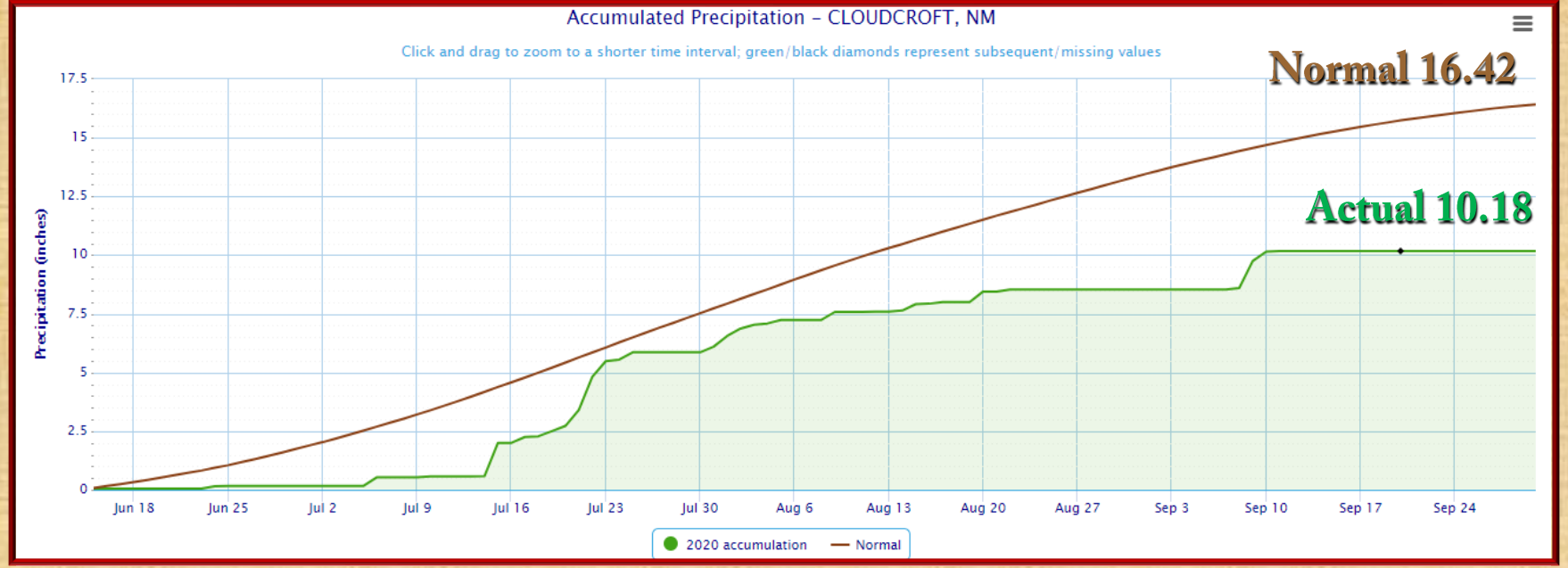
Temperature and precipitation data through September 30 for the 2020 Monsoon Season in El Paso



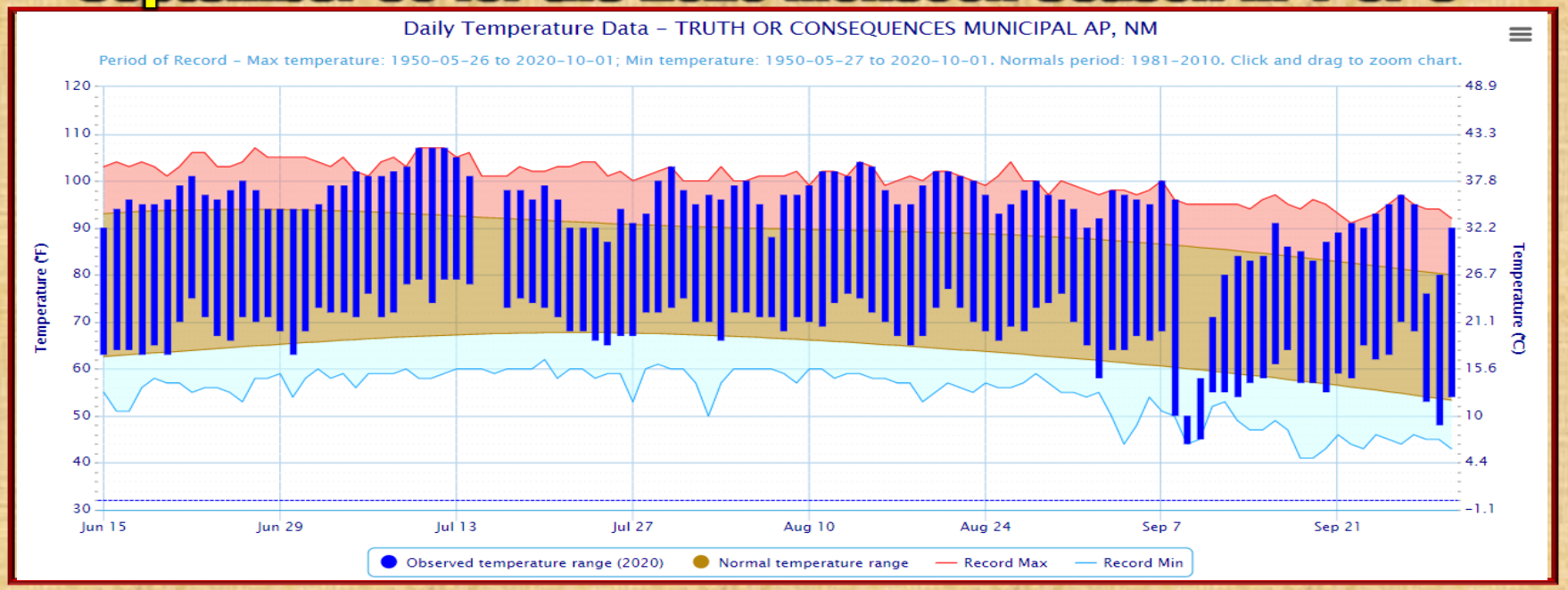


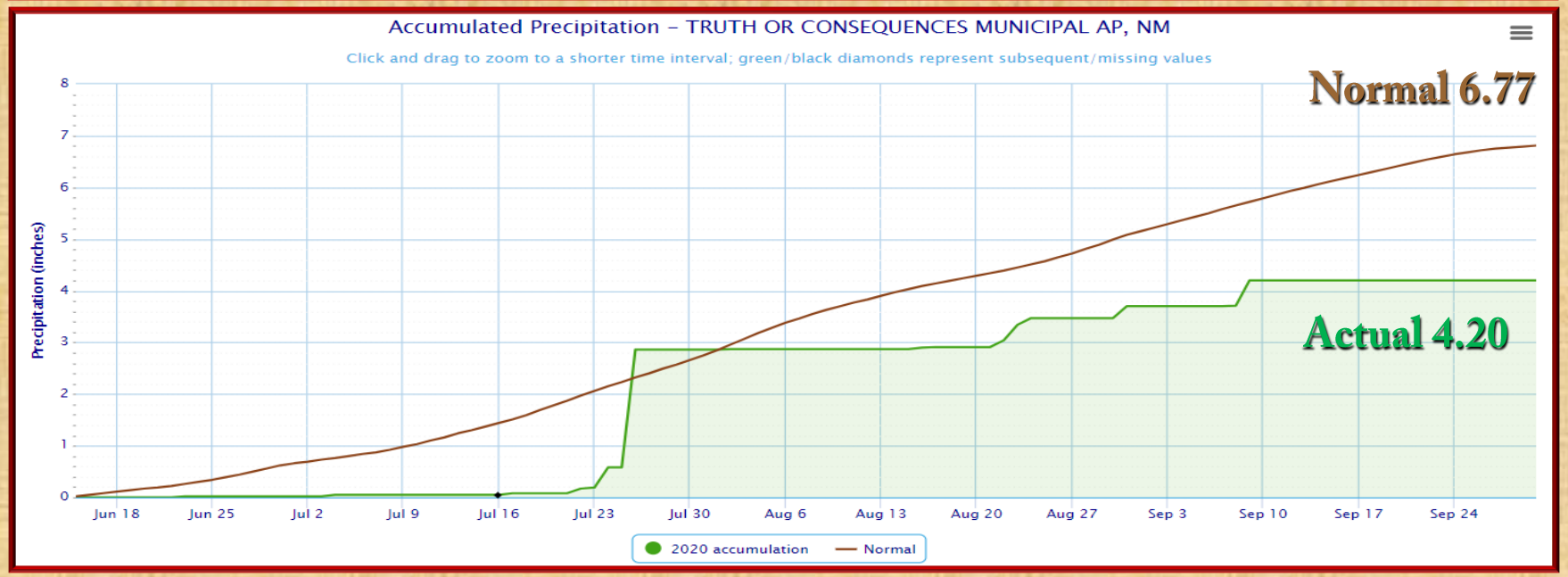
Temperature and precipitation data through September 30 for the 2020 Monsoon Season in Cloudcroft



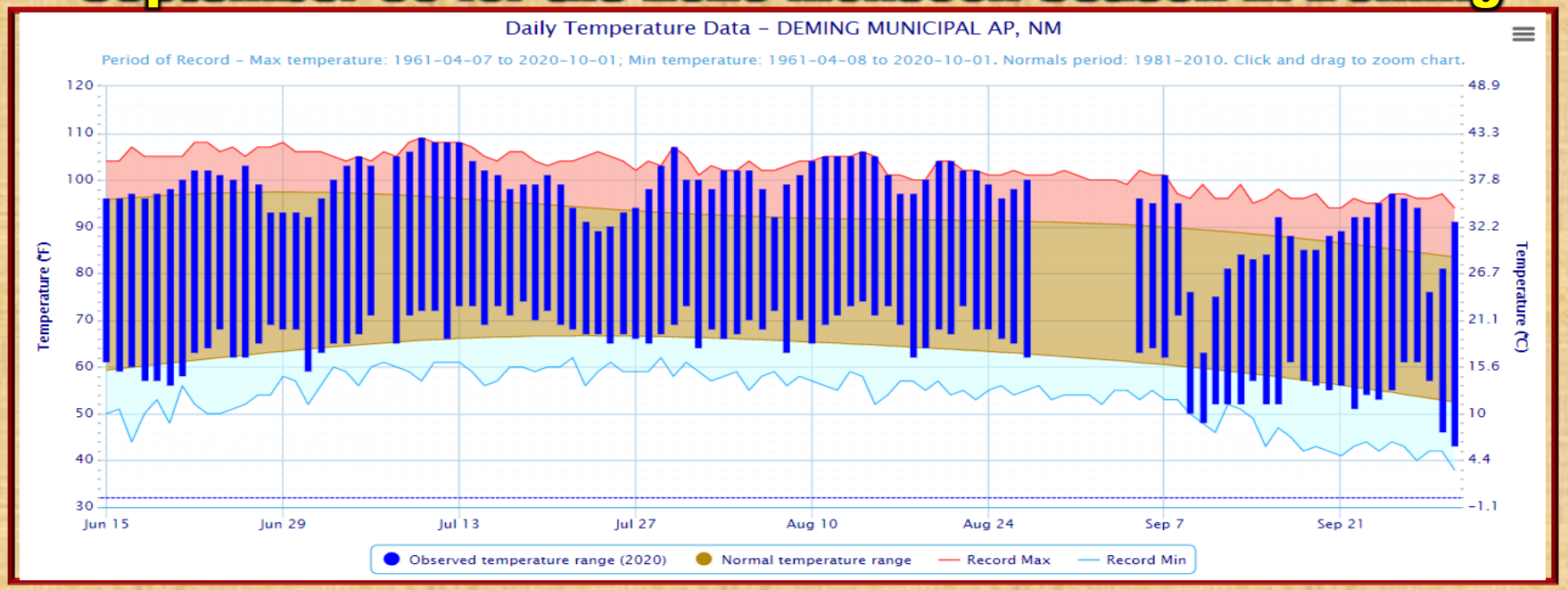


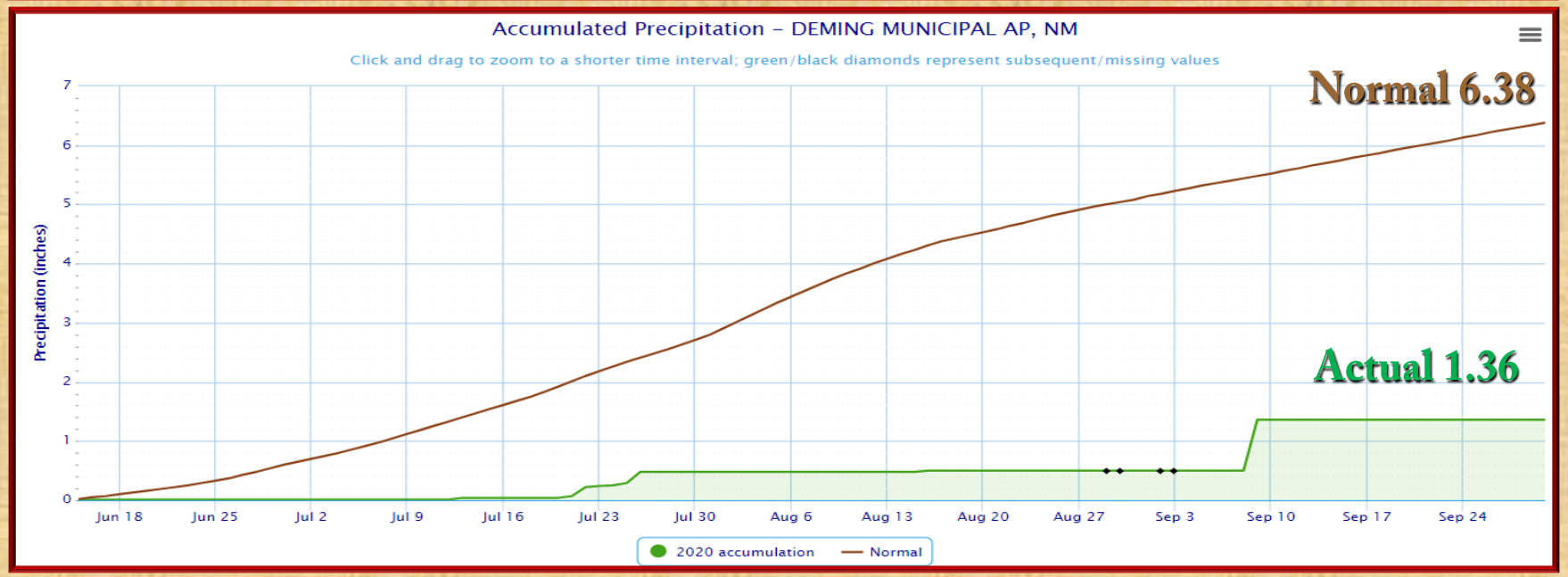
Temperature and precipitation data through September 30 for the 2020 Monsoon Season in T or C



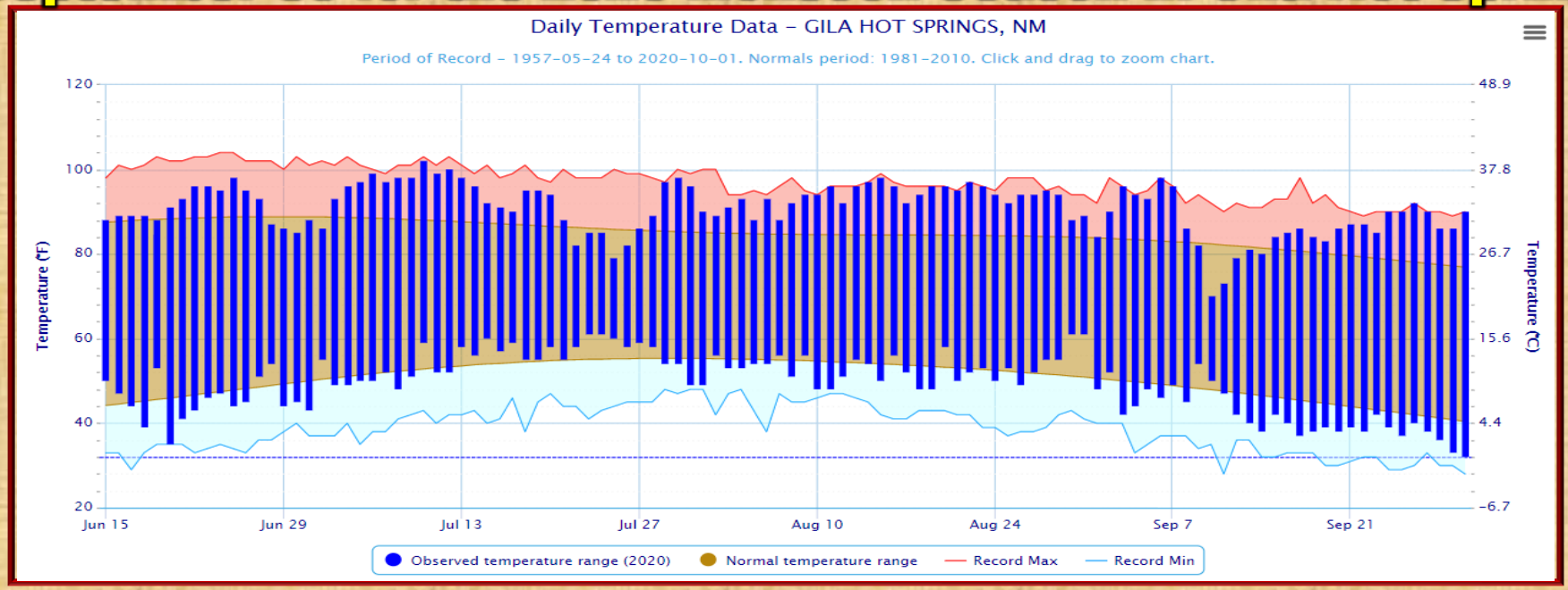


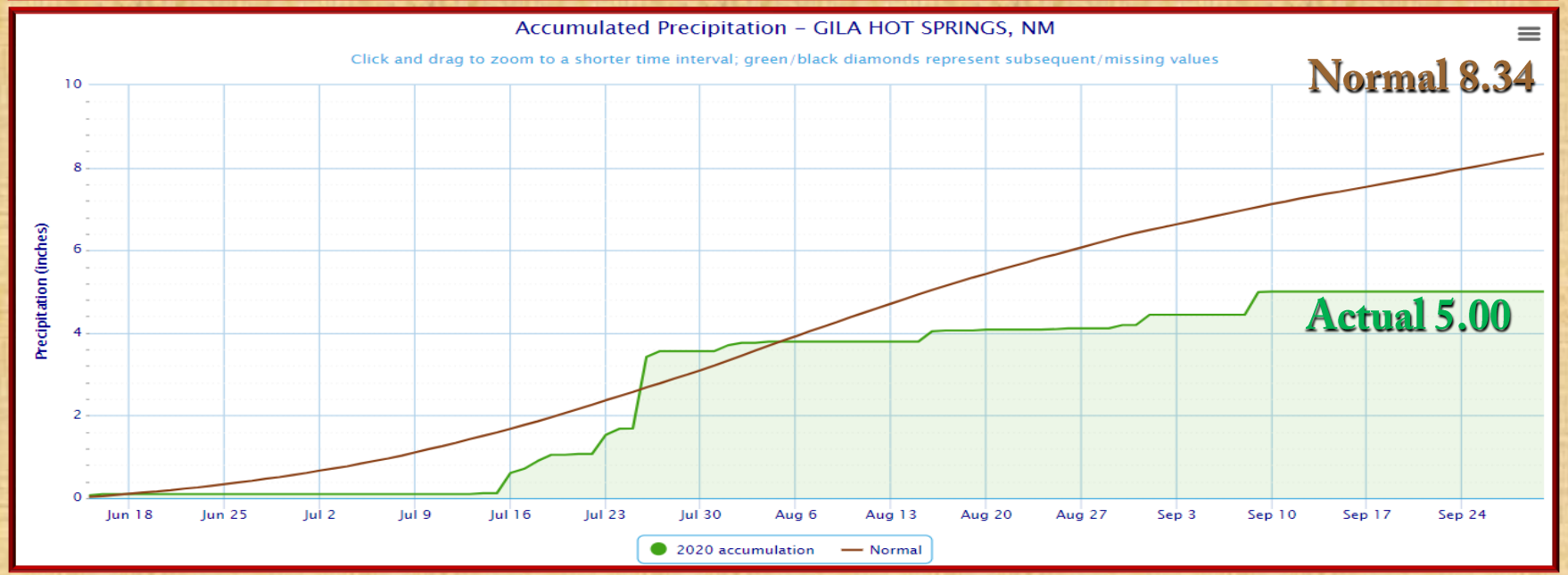
Temperature and precipitation data through September 30 for the 2020 Monsoon Season in Deming





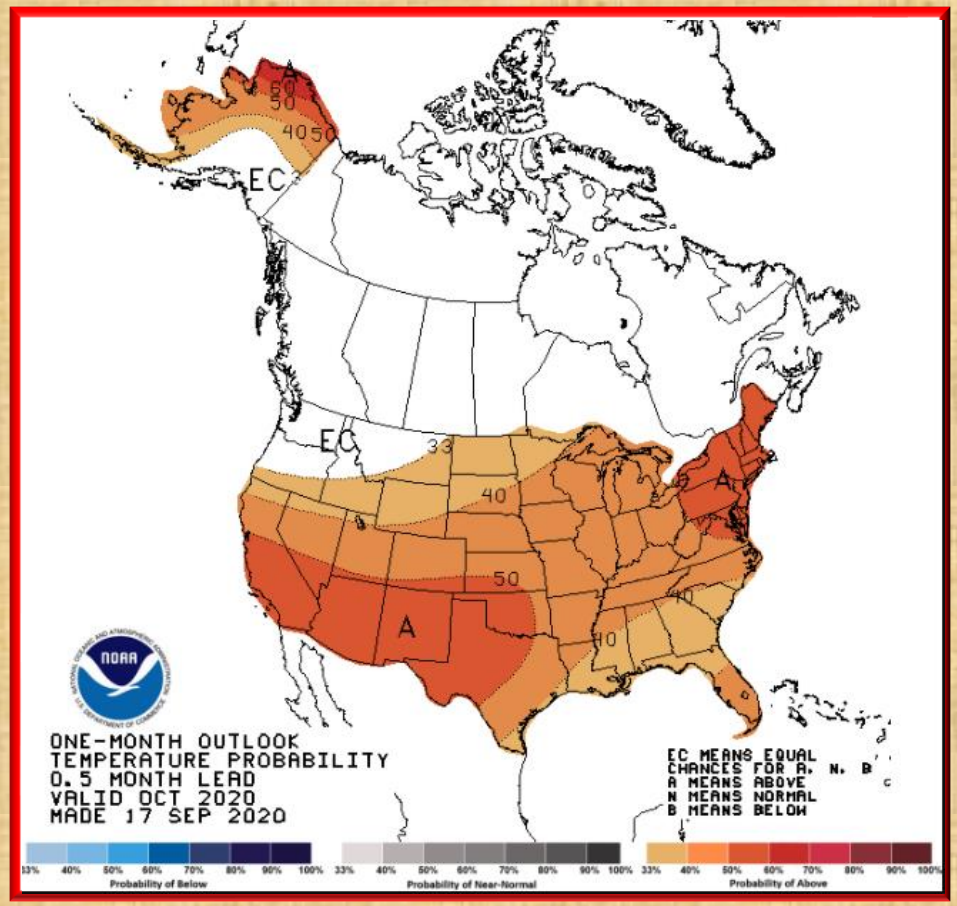
Temperature and precipitation data through September 30 for the 2020 Monsoon Season in Gila Hot Springs



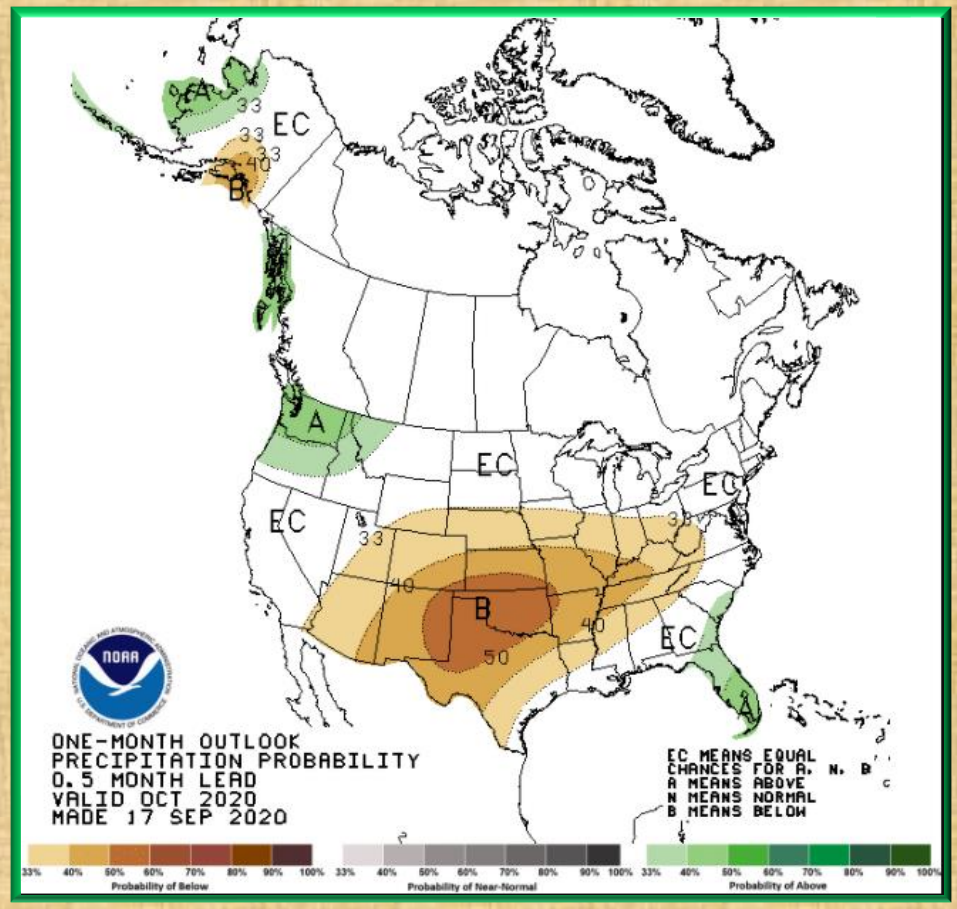


Temperature and precipitation outlook for October 2020

Temperature

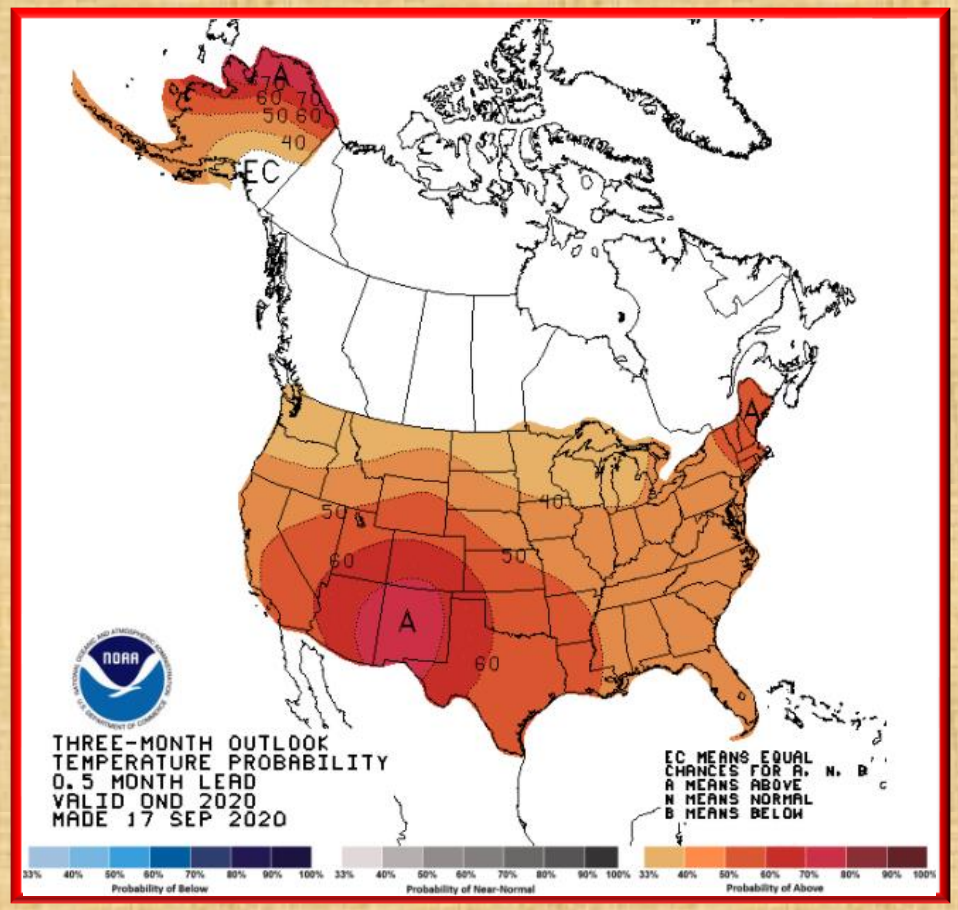


Precipitation

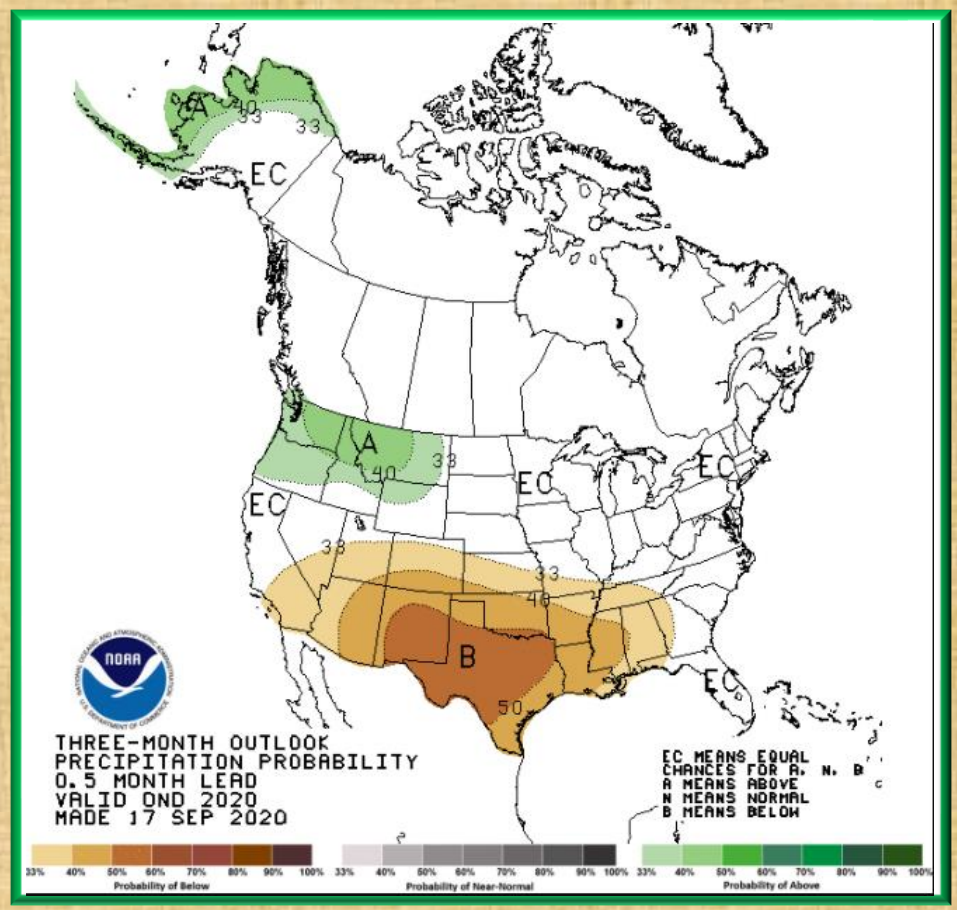


Temperature and precipitation outlook For October-December 2020

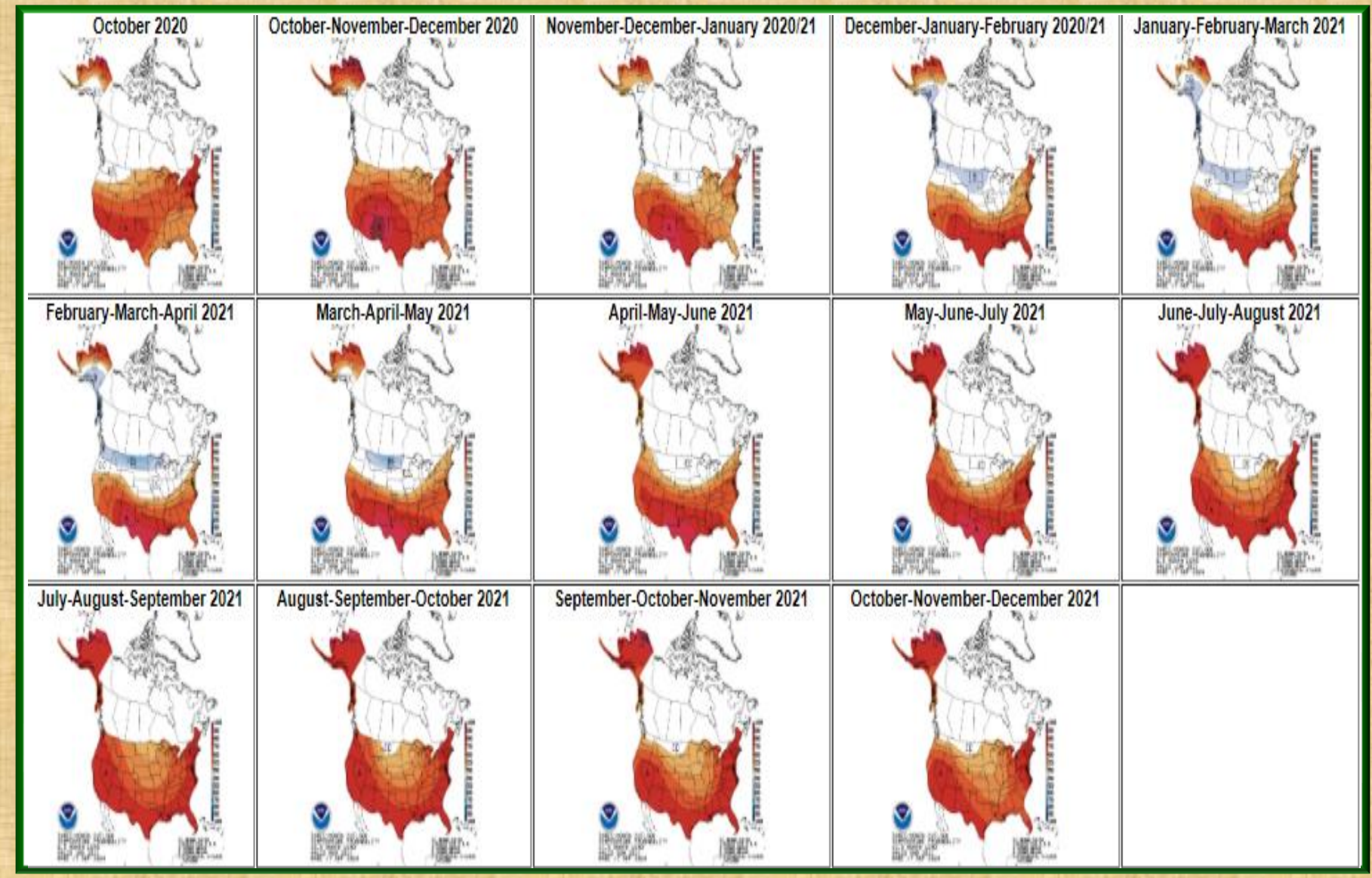
Temperature



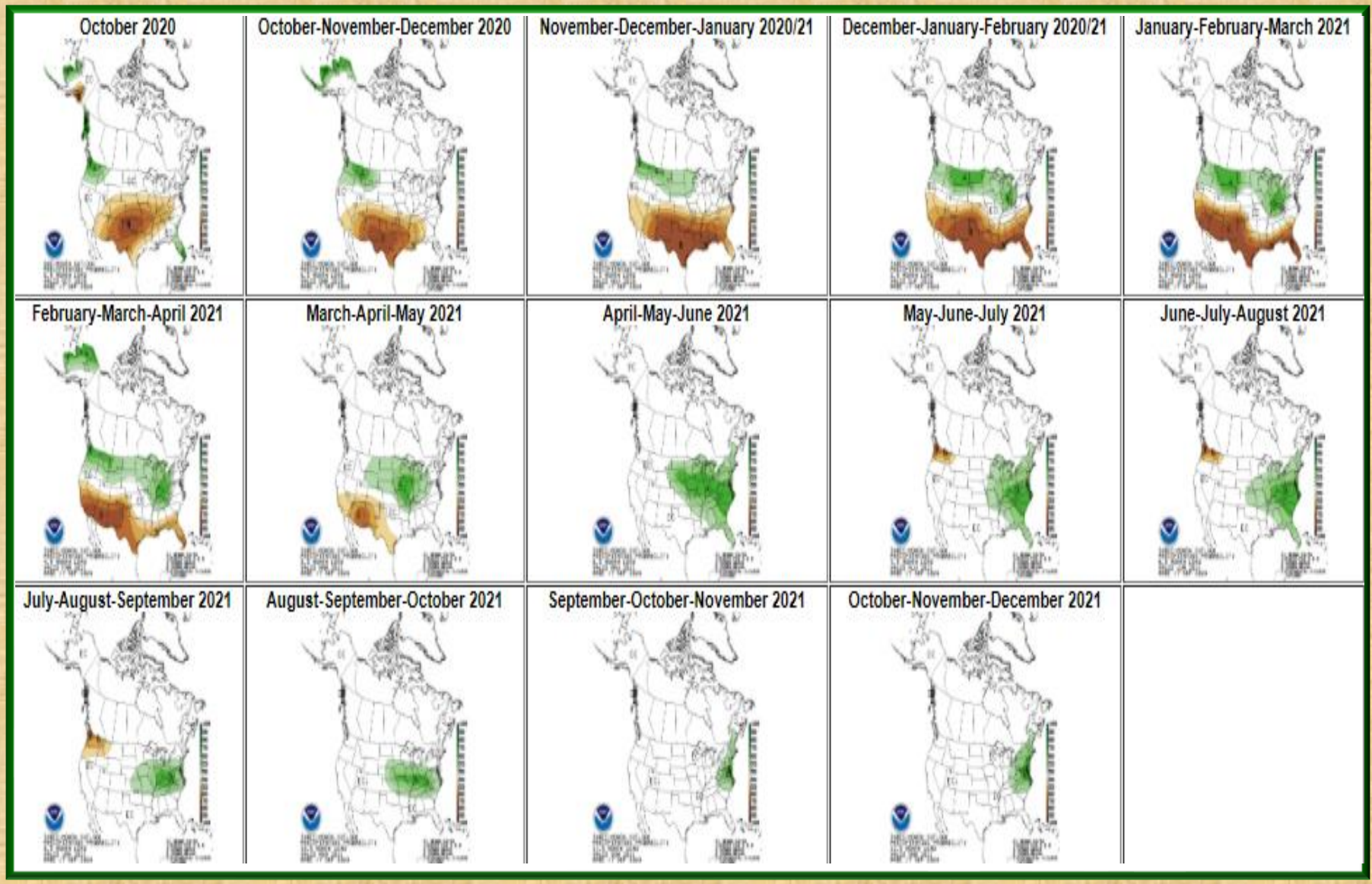
Precipitation



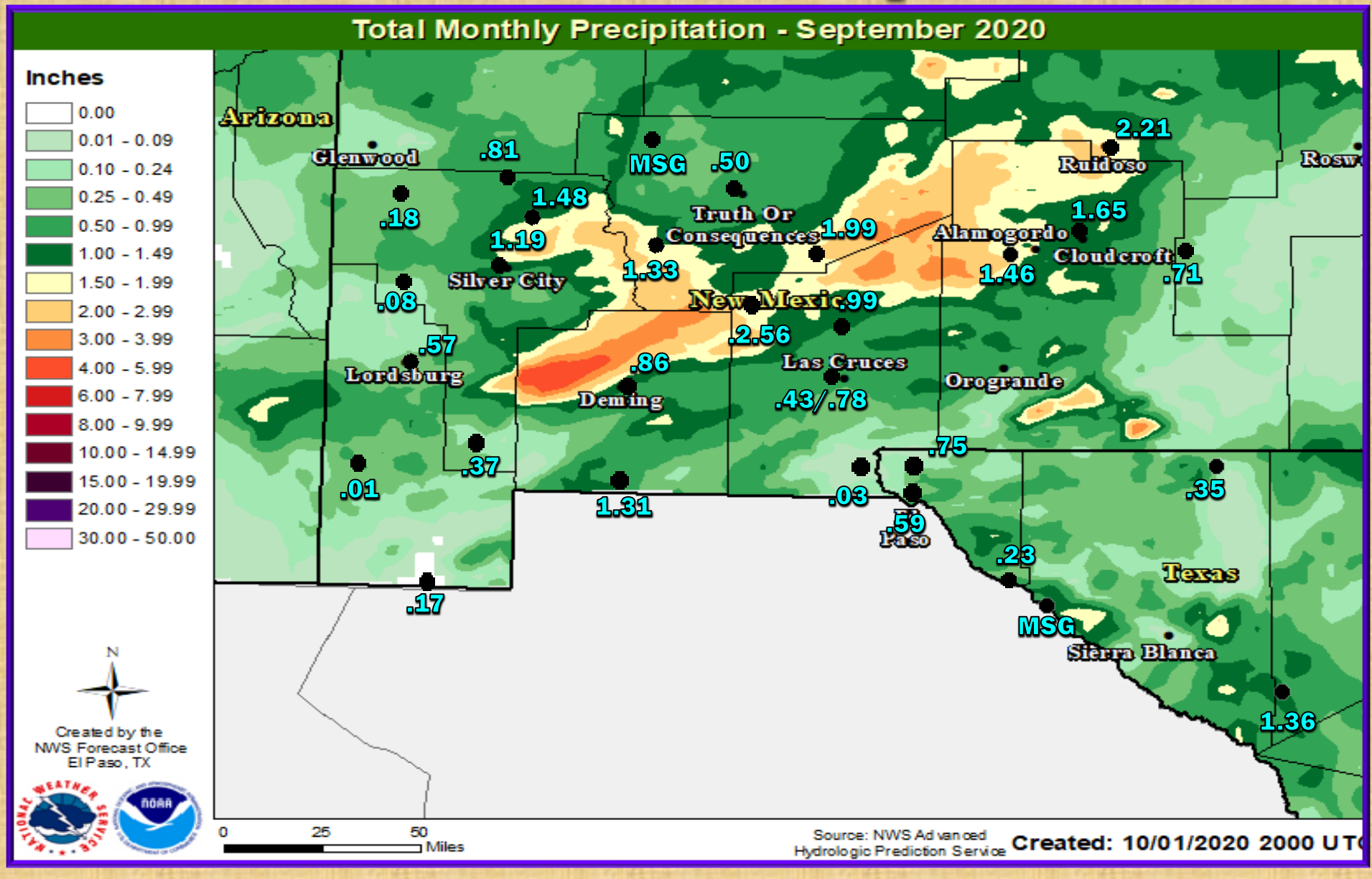
Temperature Outlook Through December 2021



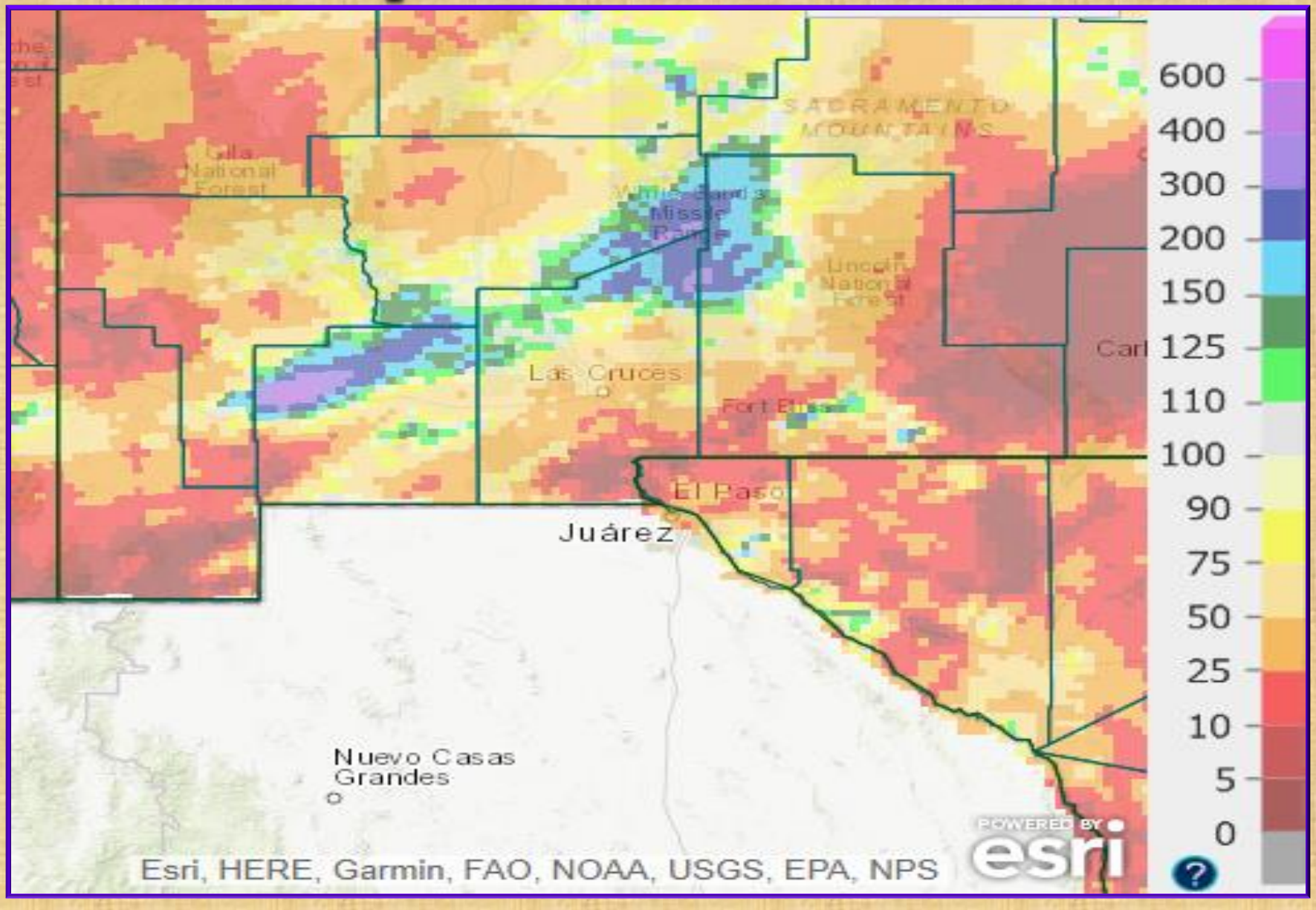
Precipitation Outlook Through December 2021



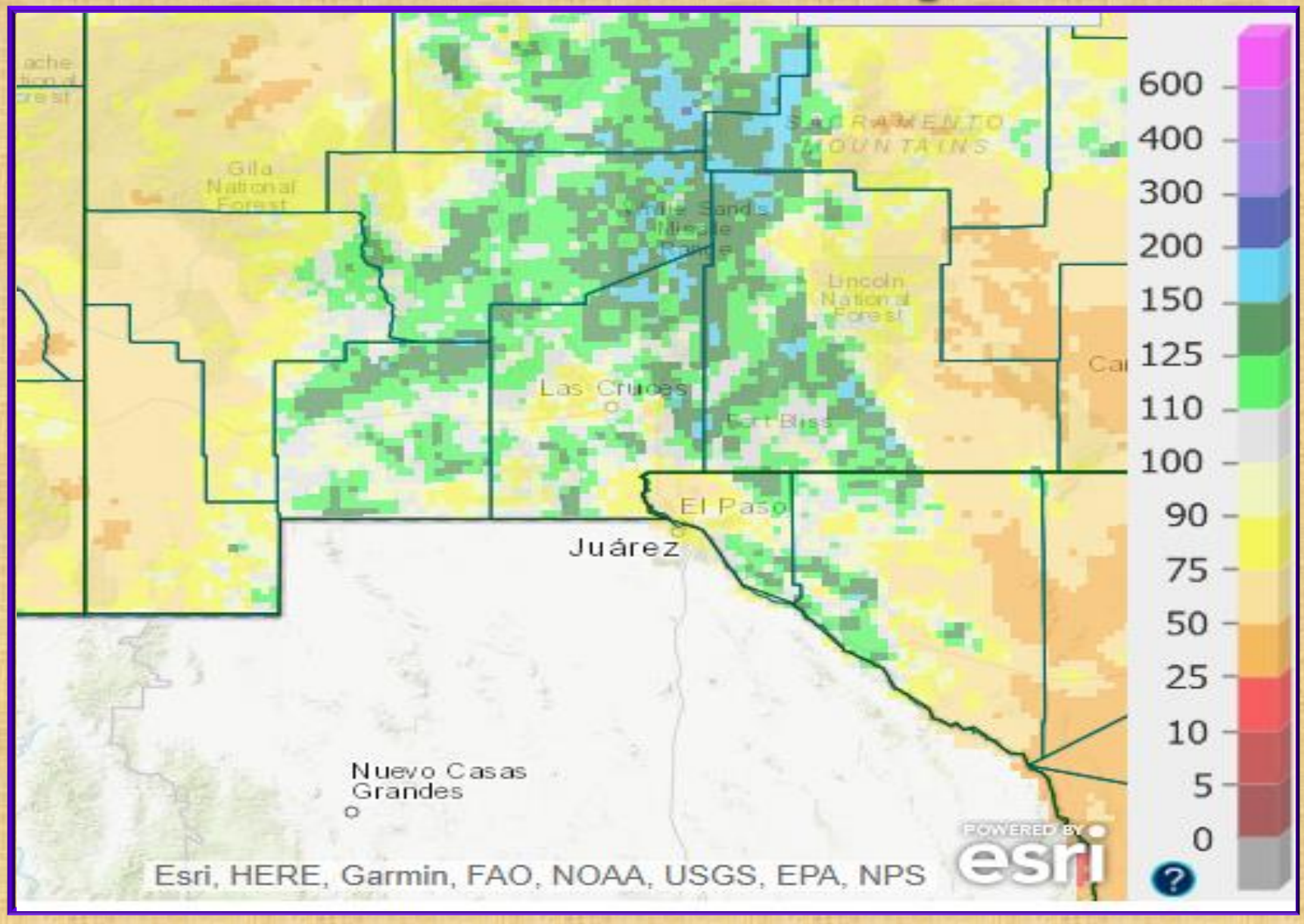
September 2020 radar rainfall estimate with surface rainfall reports



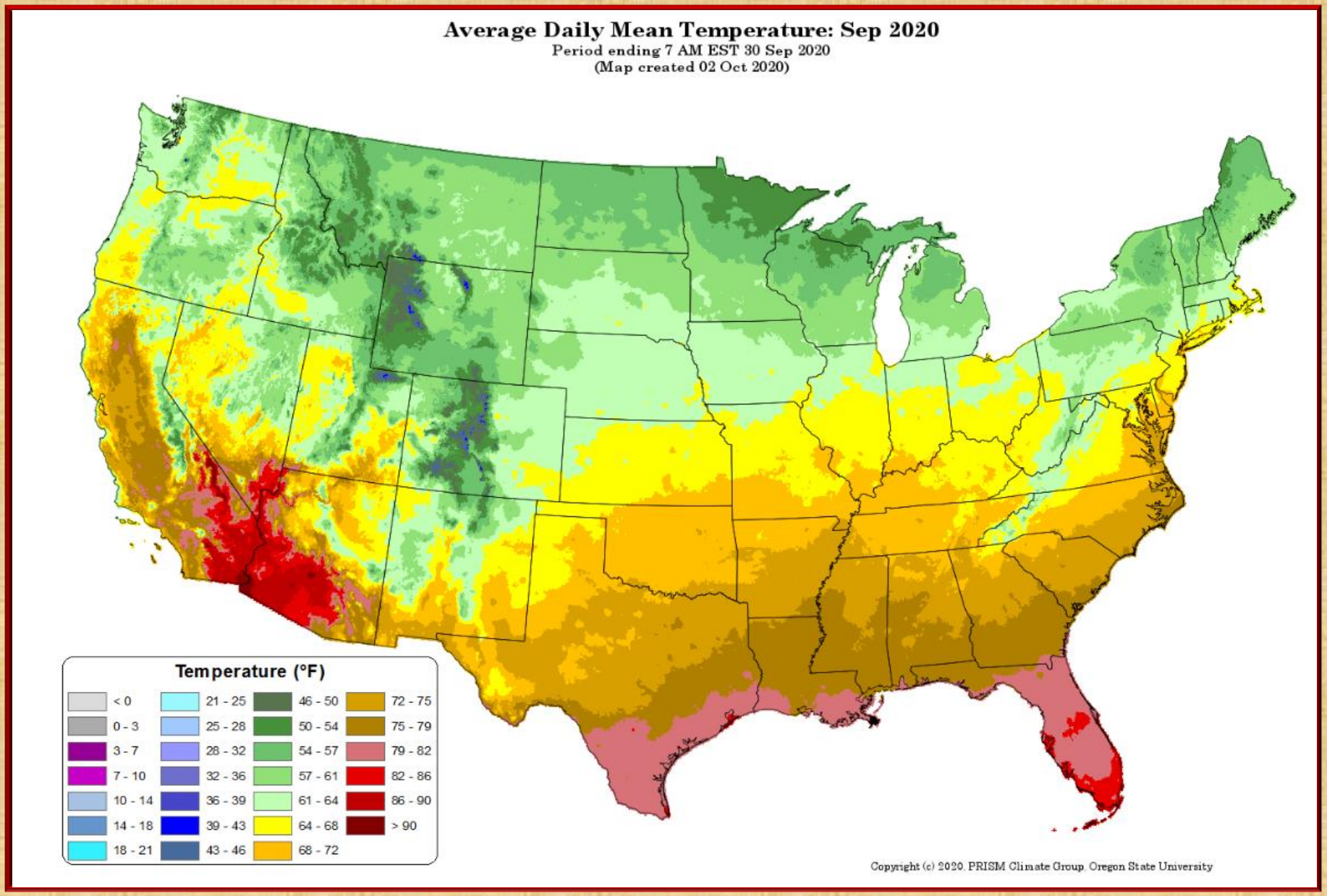
September 2020 radar rainfall estimate percent of normal



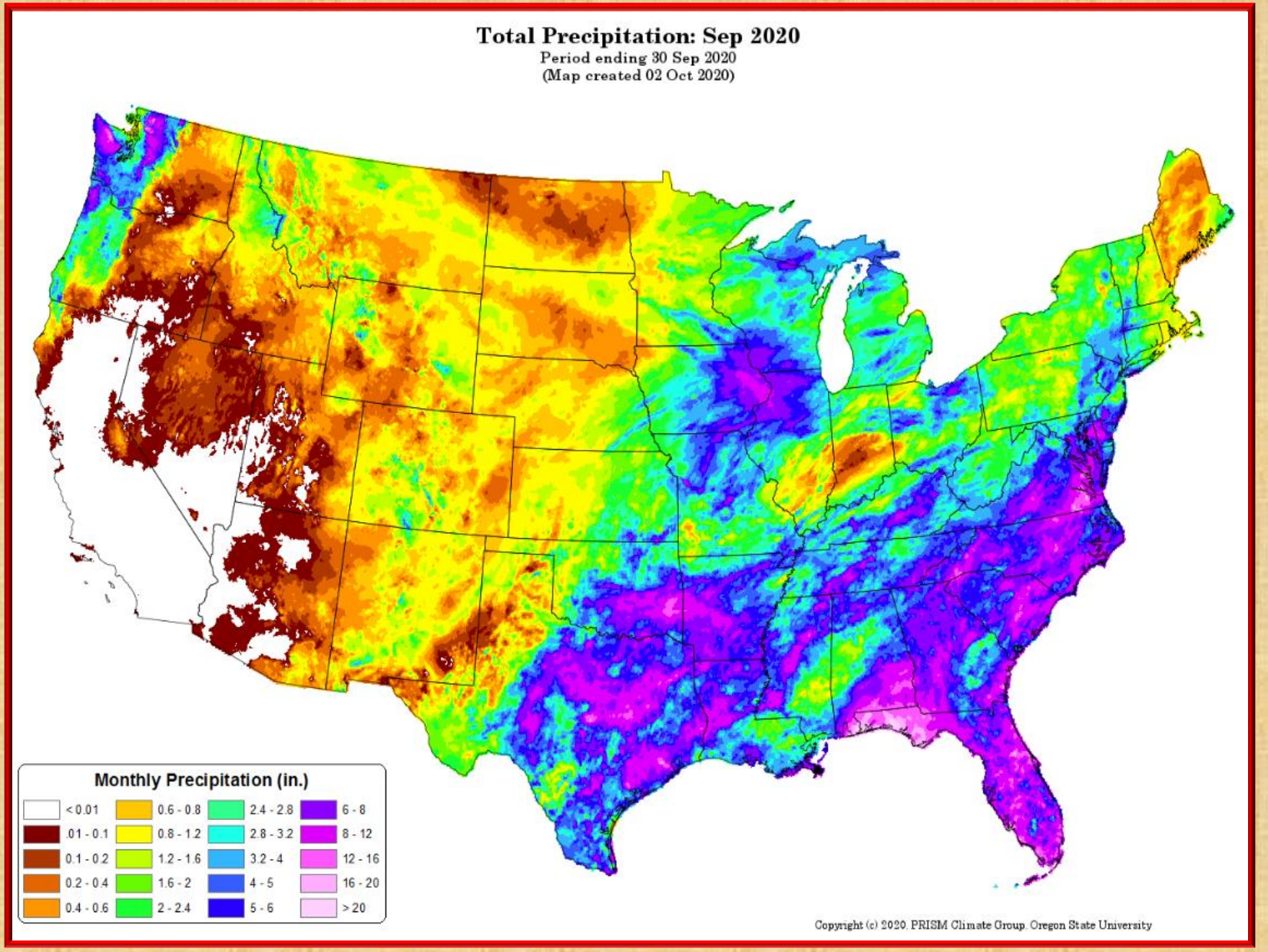
Radar rainfall estimate percent of normal for the Water Year (Oct 1 – Sep 30)



Average Daily Mean Temperature for September 2020

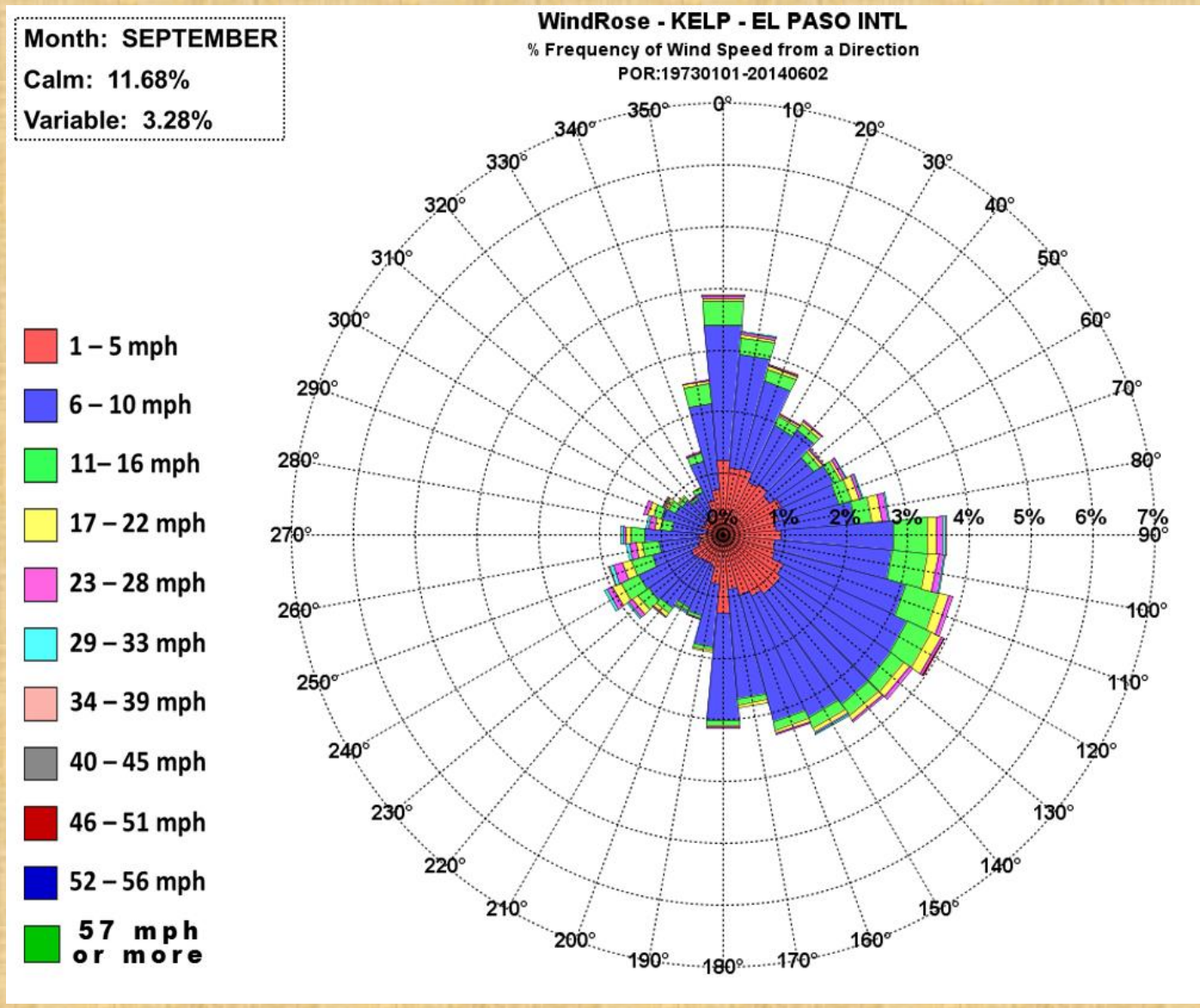


Total Precipitation for September 2020



Special Features

http://www.srh.noaa.gov/epz/?n=elpwindrosedata

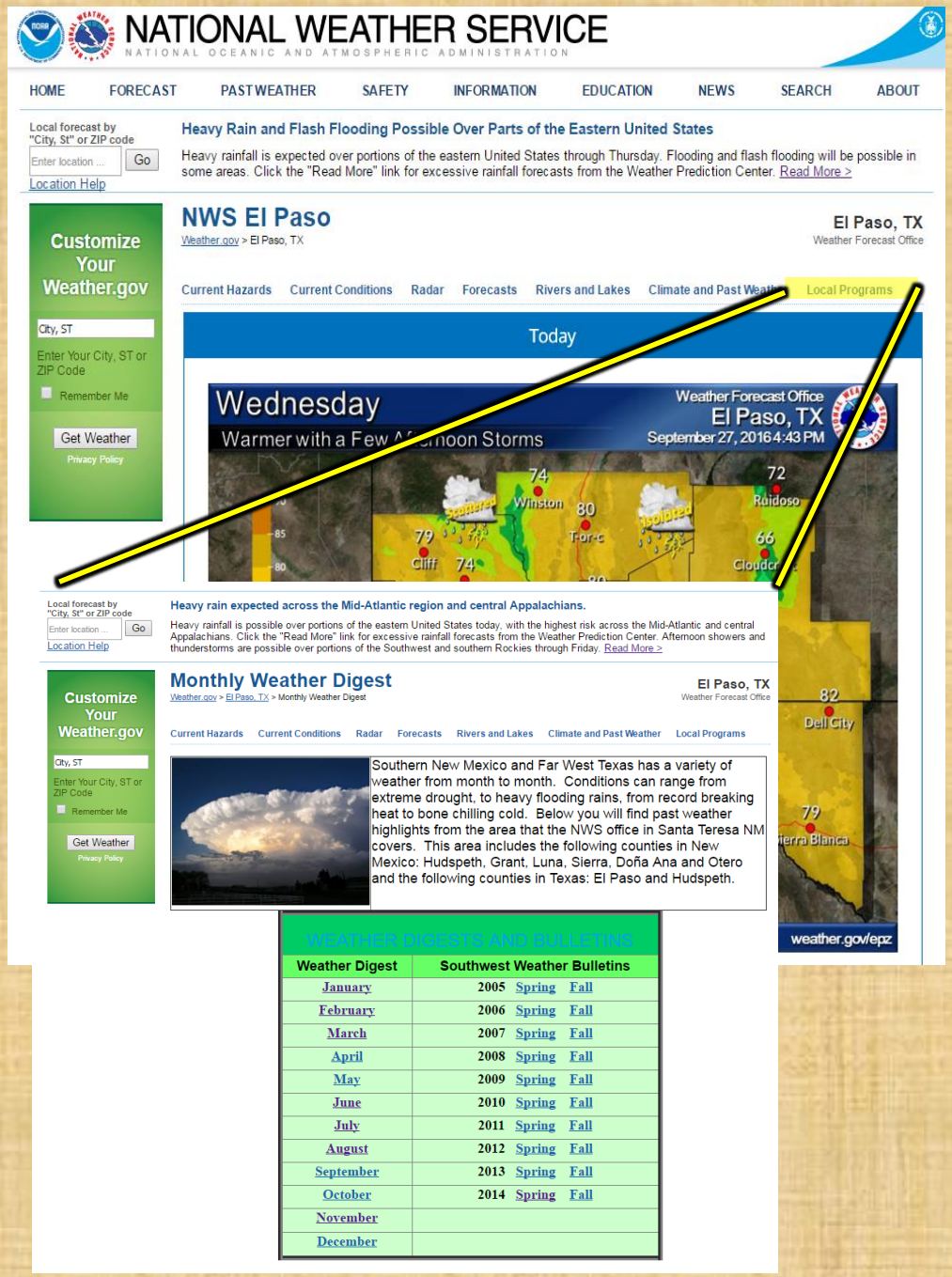


Selected weather reports September 2020

Date/Time	Location (County)	Event
SEPTEMBER 8 405 PM	BOLES ACRES-OTERO	1.75 INCH HAIL
SEPTEMBER 8 352 PM	HOLLOMAN AFB-OTERO	.75 INCH HAIL
SEPTEMBER 8 909 PM	HIGH ROLLS-OTERO	59 MPH PEAK GUST TSTM
SEPTEMBER 9 1000 AM	DEMING-LUNA	FLOODING-URBAN AND RURAL
SEPTEMBER 28 1253 AM	DELL CITY 15NE-HUDSPETH	67 MPH PEAK GUST
SEPTEMBER 28 137 AM	OROGRANDE 28NE-OTERO	55 MPH PEAK GUST
SEPTEMBER 28 423 AM	EL PASO 11NW-EL PASO	54 MPH PEAK GUST
SEPTEMBER 28 925 AM	LORDSBURG 6SW-HIDALGO	52 MPH PEAK GUST
SEPTEMBER 28 500 AM	ANTHONY-DONA ANA	52 MPH PEAK GUST
SEPTEMBER 28 200 AM	TULAROSA 9W-OTERO	51 MPH PEAK GUST
SEPTEMBER 28 1026 AM	DRIPPING SPRINGS-DONA ANA	47 MPH PEAK GUST

Selected weather reports September 2020

Date/Time	Location (County)	Event
SEPTEMBER 28 422 AM	T OR C AIRPORT-SIERRA	45 MPH PEAK GUST



Don't Forget-Current and past issues of our Weather Digest are available on our website at *http://www.weather.gov/epz/*

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.


NWS DOPPLER RADAR
WATCHING THE MONSOON SKIES
OVER EL PASO 24/7