August 2021 Weather Digest

August 2021 Weather Summary

The Monsoon season continued its productive output again in August as widespread heavy rainfall fell in a couple of stretches during the month. By far, the largest amount of rain fell in the period from the 12th to the 16th. This was due in large part to abundant tropical moisture moving up in southerly flow, and a low pressure center aloft over the area-nearly stagnant for 3 days. The area received a smaller surge of moisture which resulted in a period of rain the last couple of days of the month.

Because of the cloudiness and moisture during much of the month, temperatures at most places was either near normal to slightly below normal. Precipitation, though bunched in just a few short periods as mentioned above, nonetheless was well above normal for most areas. Most areas east of the Rio Grande valley totaled from 120 to 300% of normal, while areas to the west totaled from 75 to 200 % of normal. Finally the area west of the Continental Divide was able to join in the rain parade, which should help less the drought impact out there. In the El Paso metro area, though both sides prospered with rainfall during the month, west El Paso and the far burbs of southern Dona Ana County were the big winners—with 2 to 3 times the rainfall as the east side.

August 2021 Weather Summary, cont'd

Looking ahead to September, both temperature and daylight continue to decrease. At El Paso the average high temperature on the 1st is 92 degrees and falls to 85 degrees by the last of the month. The Monsoon season typically ends around 20-25th of the month, although the NWS official Monsoon season lasts through the end of the month. Though the Monsoon season winds down, we start to see a few more interactions with tropical storms, so that September averages around the same rainfall as August. The month begins with 12 hours and 47 minutes of daylight and ends with 11 hours and 52 minutes of daylight. The autumnal equinox arrives on the 22nd, though in our area of southern New Mexico and west Texas, equal daylight and night occurs on the 25th. For you Lunar fans, the New Moon occurs on the 6th, while the Full Moon occurs on the 20th.


August 11 El Paso Thunderstorm


August 12 El Paso Flooding


August 12 El Paso Flooding
SUSHI Z
LIQUORS


August 12 El Paso Flooding
Chevron


August 12 El Paso Flooding


August 12 El Paso Flooding
OPEN MRI


August 12 El Paso Thunderstorm
© F&D Photography


August 12 La Union Flooding


August 14 Flooding


August 12 La Union Flooding


August 12 La Union Flooding


August 12 La Union Flooding


August 13 El Paso Thunderstorm


August 13 El Paso Thunderstorm


August 13 Santa Teresa
Thunderstorm


August 14 Santa Teresa Flood
Damage


August 14 Flooding


August 14 Canutillo Flooding
Canutillo-La Union
La Mesa Ave
ROAD CLOSED


August 14 Canutillo Flooding


August 14 Canutillo Flooding
JERKY'S
TAMALES
LUPITA

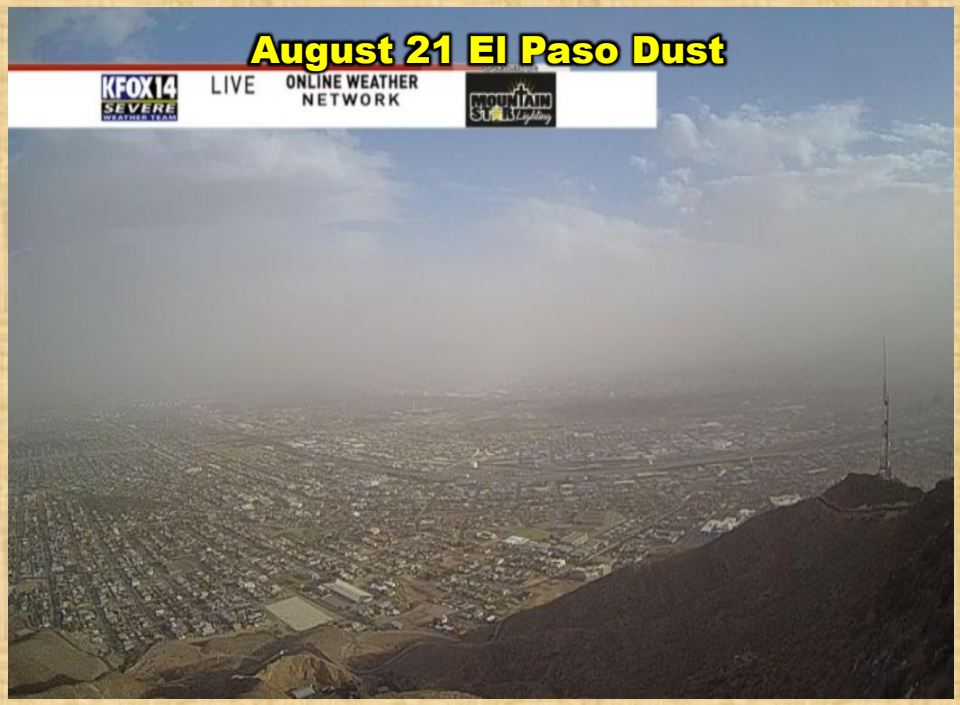

August 14 Flooding


August 14 Transmountain Flooding

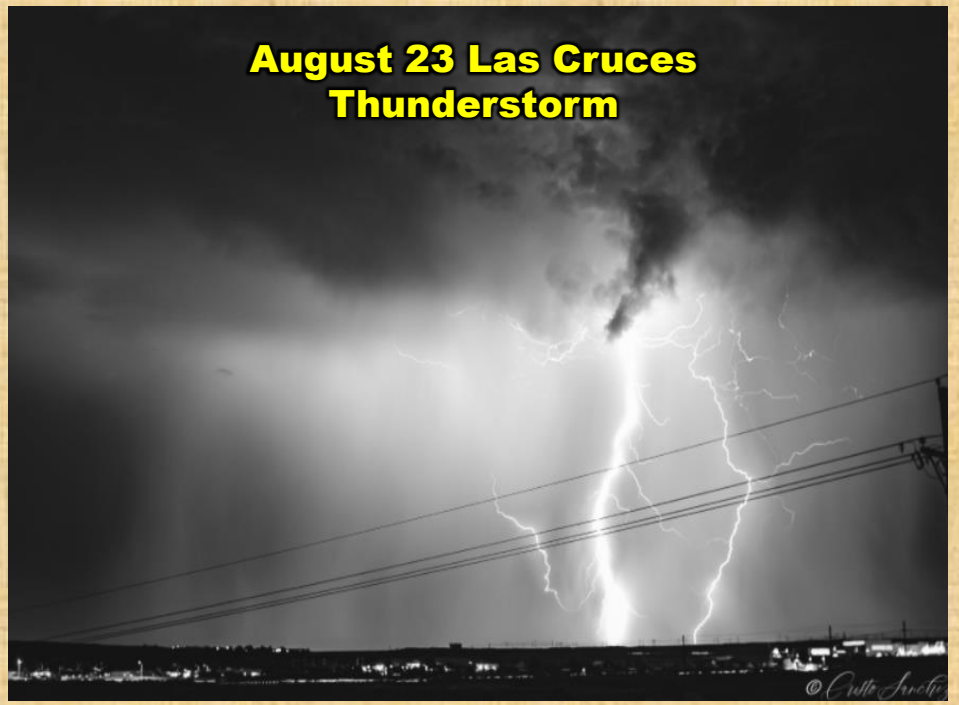

August 12 Las Cruces Flooding


August 14 Canutillo Flooding
TAMALES
LUPITA

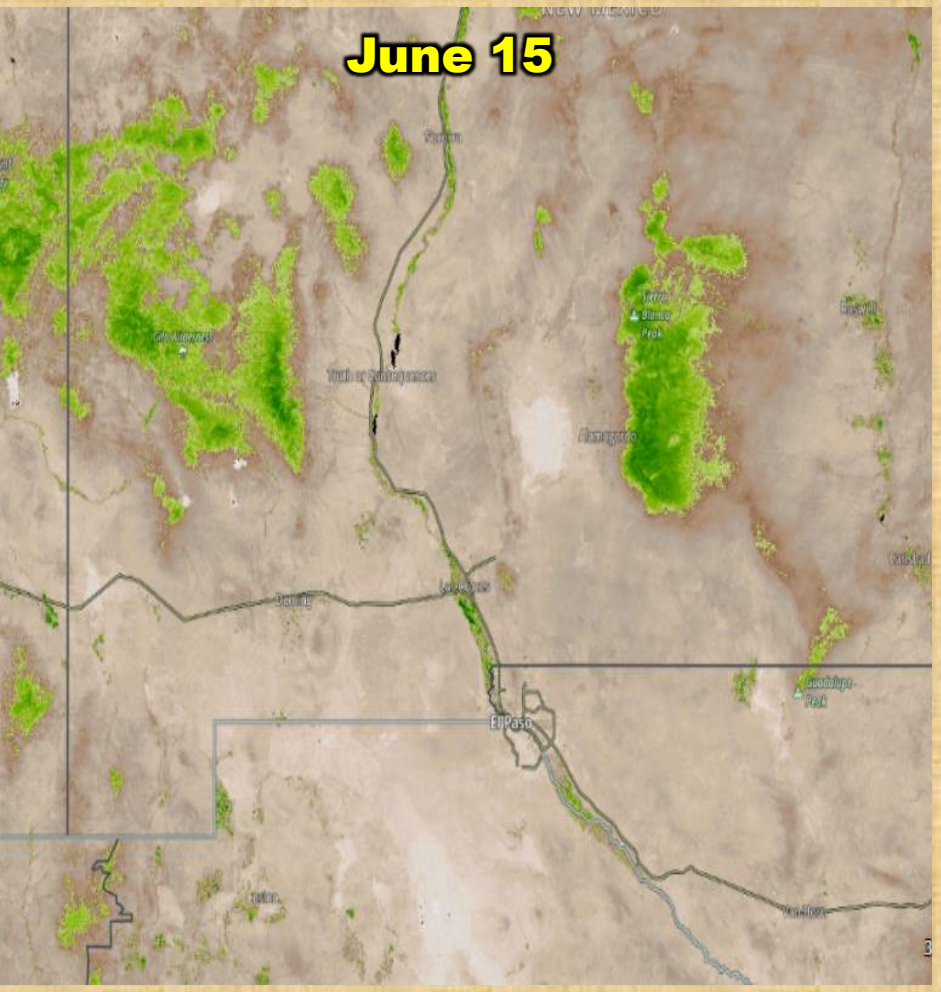

August 15 Santa Teresa Flooding


August 21 El Paso Dust
KFOX 14
SEVERE
LIVE
ONLINE WEATHER
NETWORK
MOUNTAIN


August 23 The Franklins all Green


August 23 Las Cruces
Thunderstorm

Vegetative Index (amount of greenness) across the Borderland



El Paso Average Summer Rainfall (June-August): 3.98"

(Data Source: El Paso International ASOS KELP, CoCoRaHS)

El Paso 3.3 NNE	TX-EP-17	14.80	El Paso 8.8 SE	TX-EP-80	10.37
El Paso 6.0 N	TX-EP-16	13.25	El Paso 11.3 ENE	TX-EP-59	10.04
El Paso 11.2 WNW	TX-EP-70	13.20	El Paso 7.8 WNW	TX-EP-74	9.69
El Paso 4.3 N	TX-EP-134	13.19	El Paso 6.9 WNW	TX-EP-111	9.52
El Paso 4.6 WSW	TX-EP-136	12.15	UTEP EHS	TX-EP-53	9.45
El Paso 1.2 WSW	TX-EP-78	12.12	El Paso 5.1 SW	TX-EP-56	9.33
El Paso 9.1 WNW	TX-EP-48	12.05	El Paso 8.5 SSE	TX-EP-131	9.26
El Paso 6.4 SE	TX-EP-25	11.91	El Paso 7.8 ESE	TX-EP-132	8.89
El Paso 7.6 SE	TX-EP-51	11.90	El Paso 7.5 SE	TX-EP-84	8.65
El Paso 1.7 W	TX-EP-75	11.66	El Paso 4.6 WSW	TX-EP-76	8.48
El Paso 6.4 SE	TX-EP-79	11.64	El Paso 10.7 E	TX-EP-40	8.31
Canutillo 1.2 W	TX-EP-104	11.58	Wyler Tramway SP	TX-EP-73	7.98
El Paso 5.5 SW	TX-EP-86	11.06	Sierra Blanca 14.7 SSE	TX-HDS-13	7.68
El Paso 2.9 SSW	TX-EP-72	11.05	El Paso 10.7 E	TX-EP-63	7.57
El Paso 4.7 N	TX-EP-68	11.00	Socorro 2.3 SSW	TX-EP-128	7.47
Allamoore 4.2 SW	TX-HDS-4	10.87	Anthony 1.0 ENE	TX-EP-88	7.24
El Paso 3.8 SSW	TX-EP-44	10.71	Acala 2.4 NW	TX-HDS-25	4.45
El Paso 4.6 NNE	TX-EP-69	10.61	Rio Bosque Wetlands Park	TX-EP-50	2.40
El Paso 5.1 N	TX-EP-98	10.55	Fort Hancock 9.9 SE	TX-HDS-31	1.94

ENSO Alert System Status: La Niña Watch in Affect

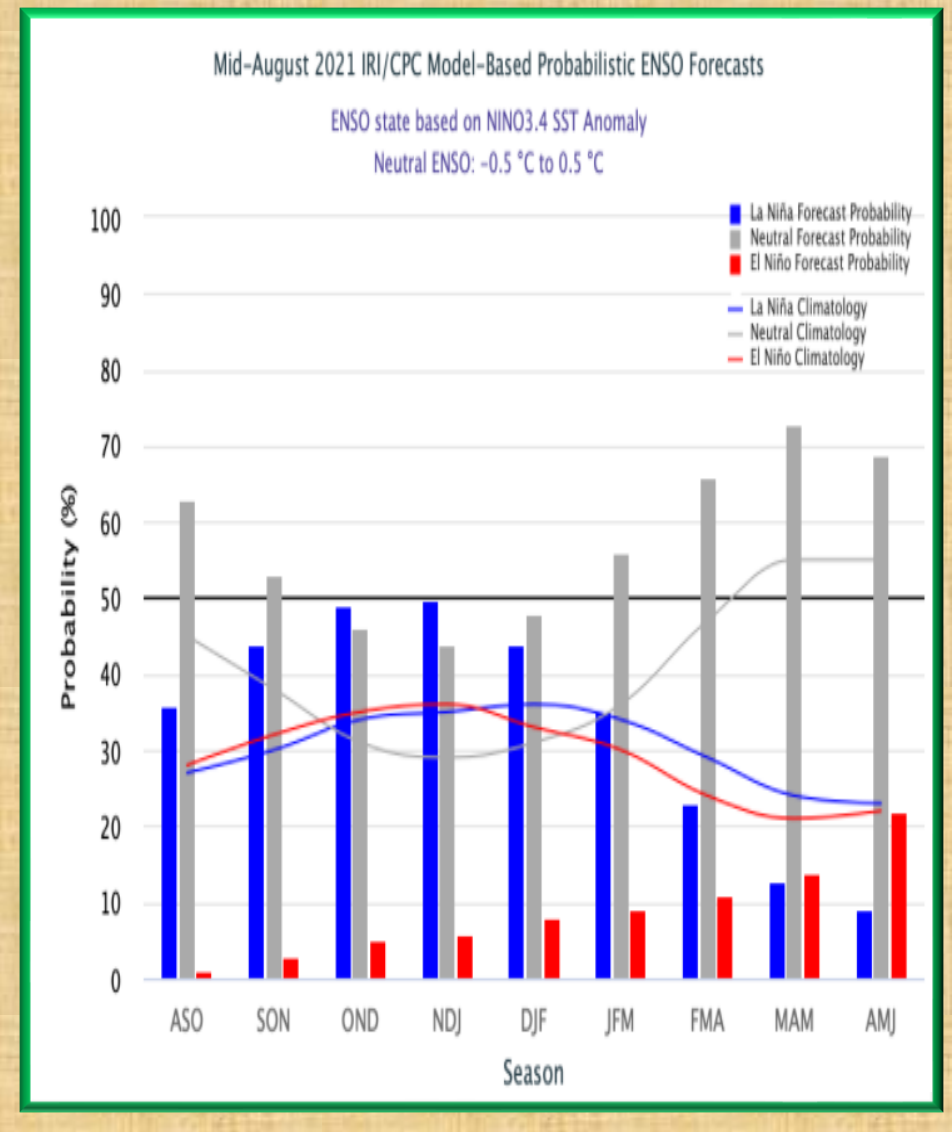
ENSO Alert System

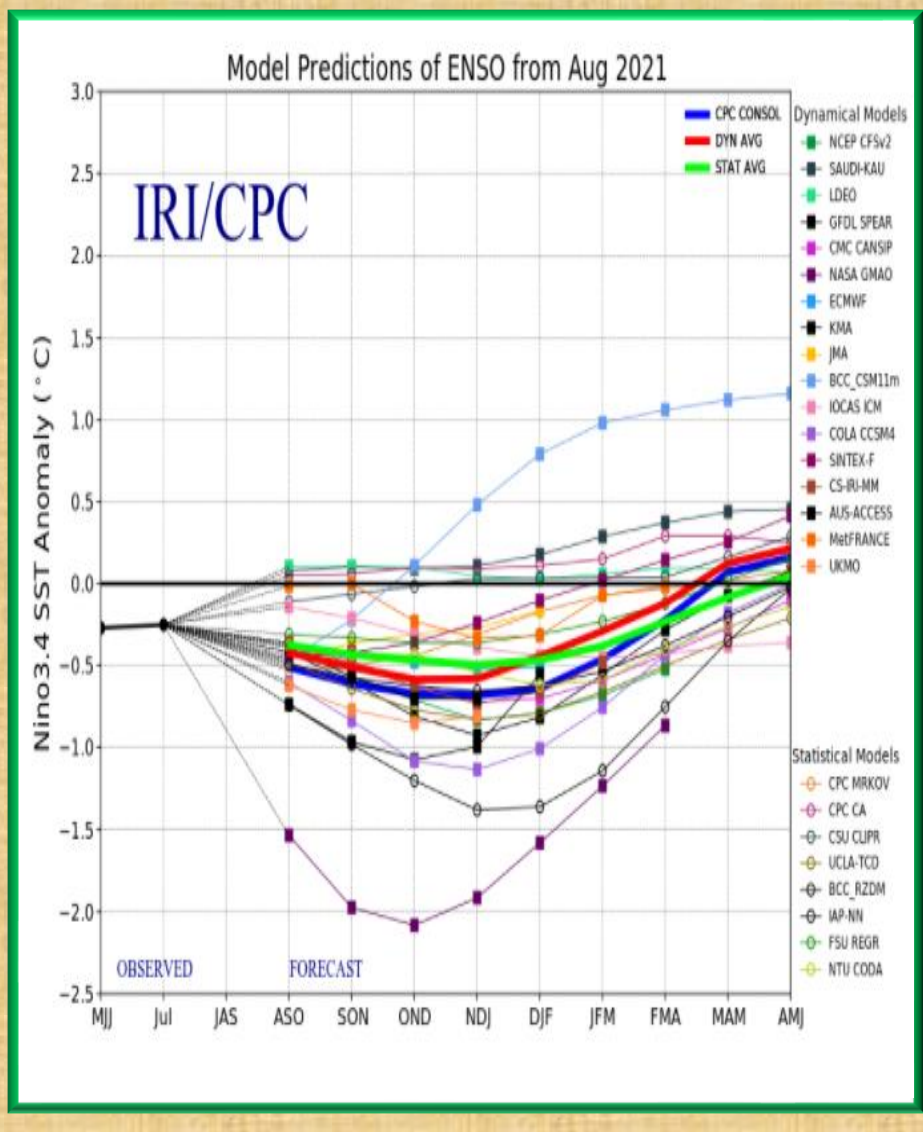
- El Niño or La Niña Watch: Issued when conditions are favorable for the development of El Niño or La Niña conditions in the next six months.

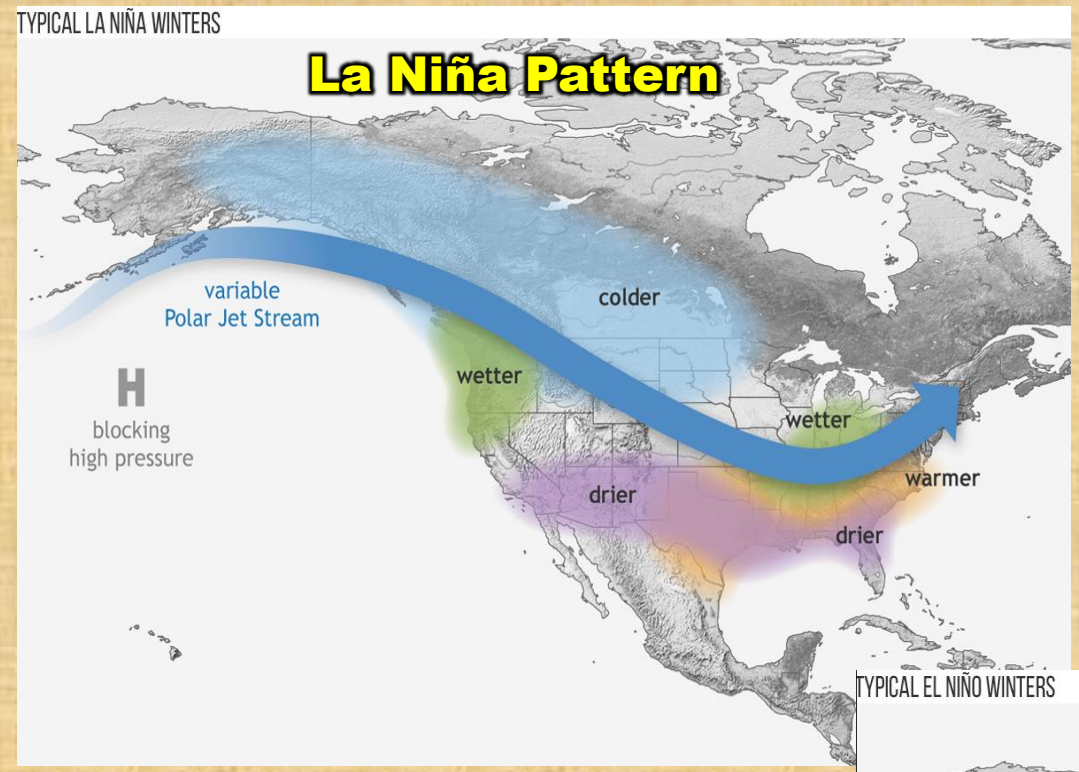
- El Niño or La Niña Advisory: Issued when El Niño or La Niña conditions are observed and expected to continue.

ENSO Forecast

ENSO is in a neutral status; good chance of returning to La Niña for much of the winter ahead.

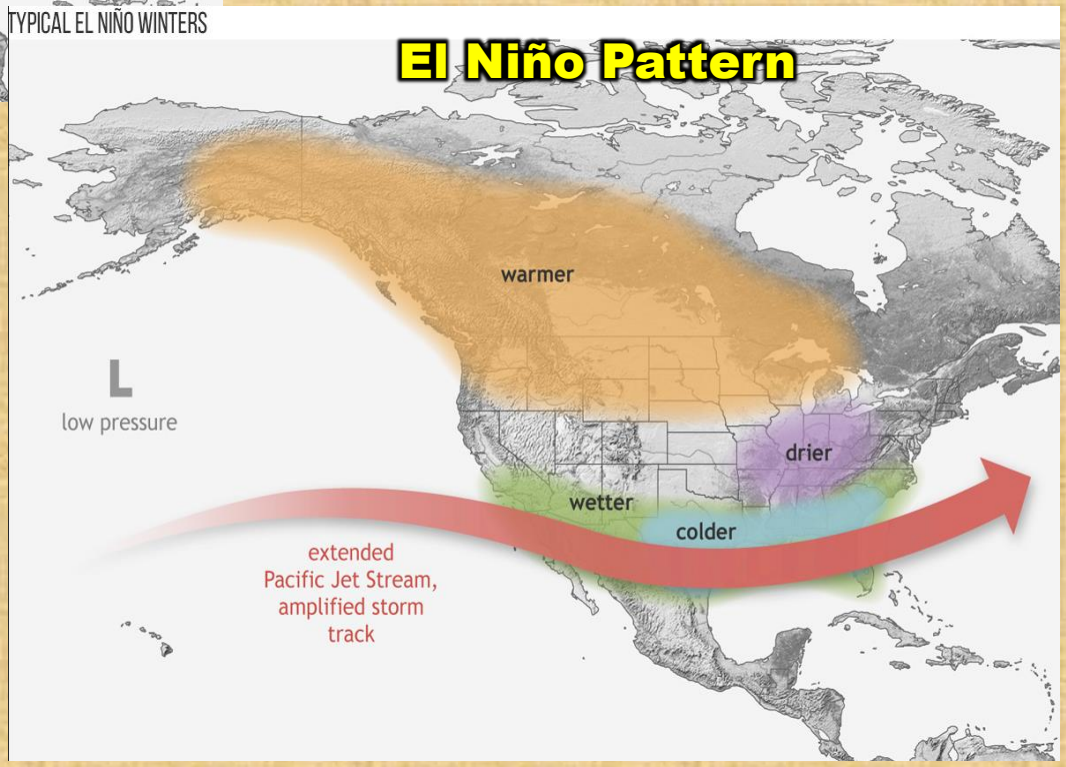


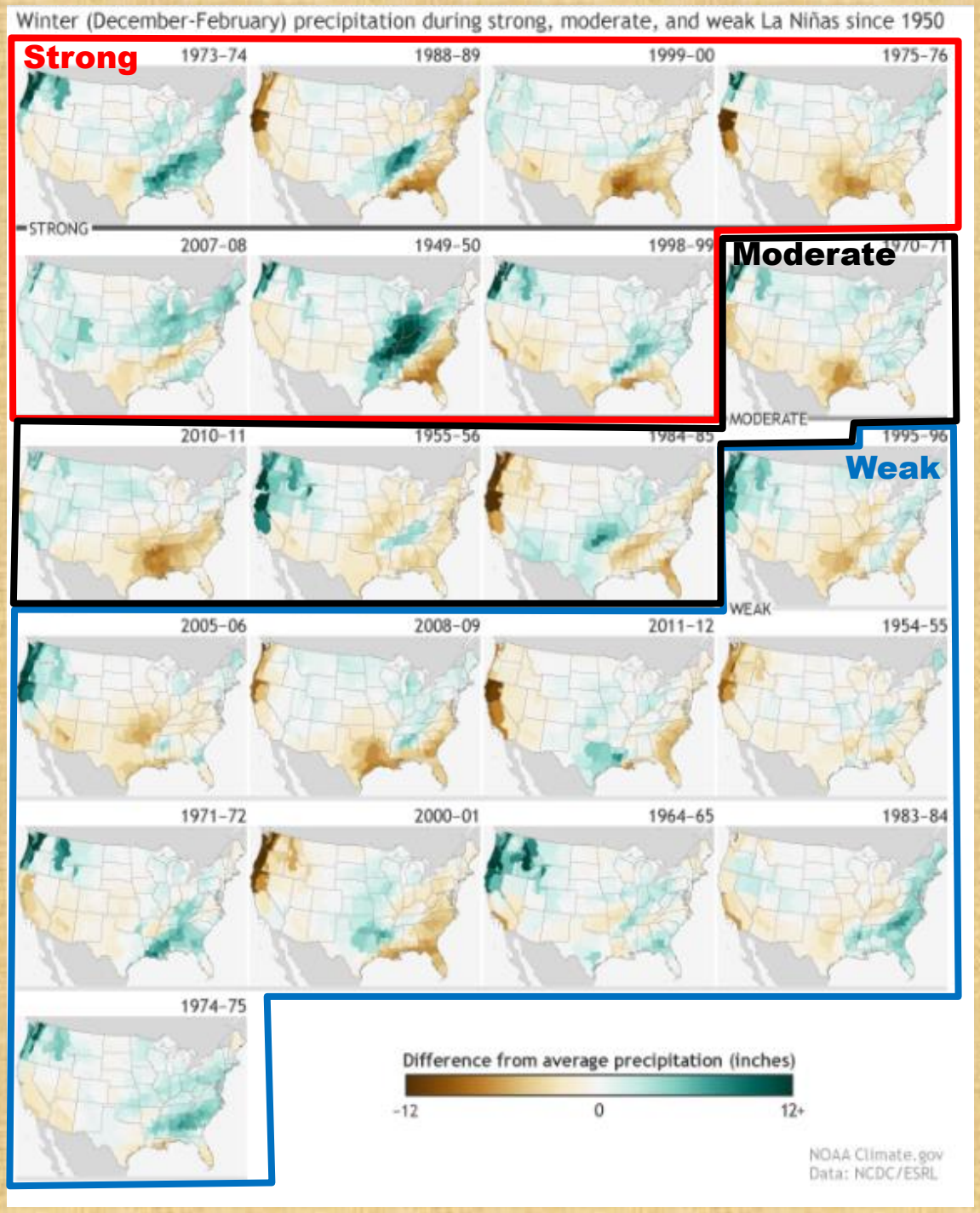




With a La Niña pattern, a ridge of high pressure tends to build off the west coast of the U.S., blocking most of our Pacific winter storm systems. These storms tend to end up moving across the northern Plains and down to the southeastern part of the country. Of course it is important to remember that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

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 south-western U.S. above normal precipitation.



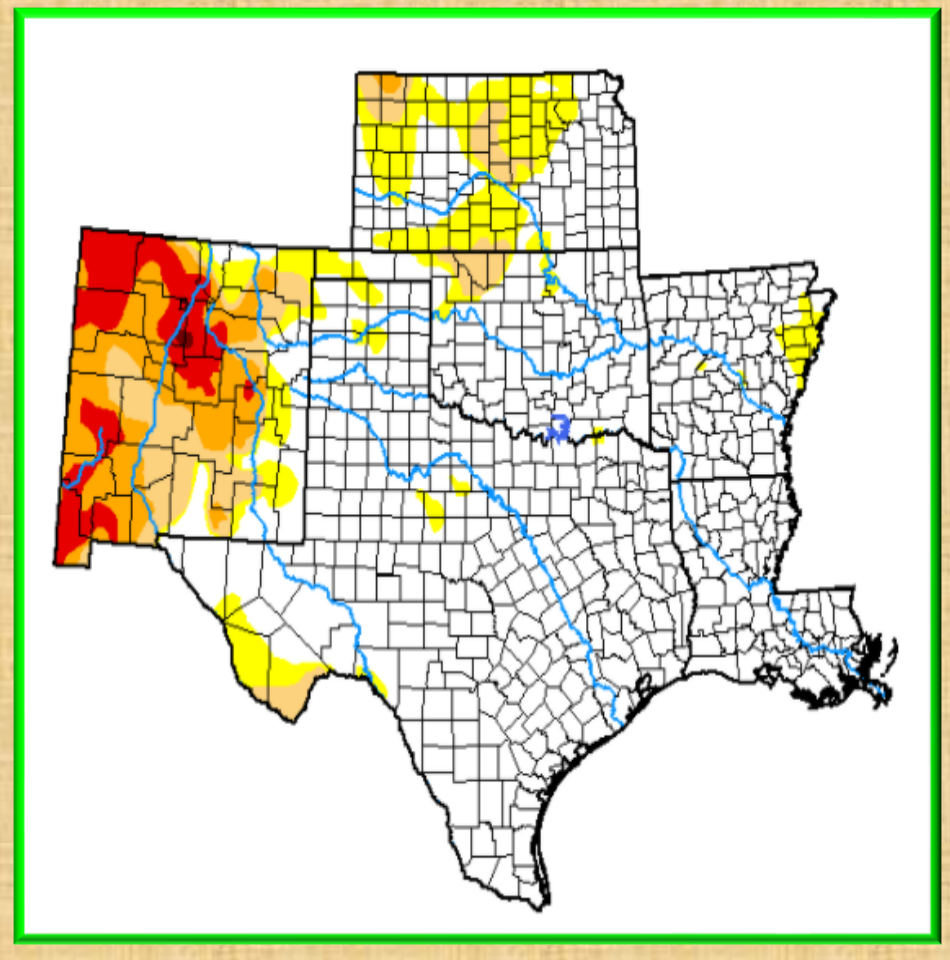


Examples of the numerous La Niña winters since 1950. These maps depict the departure from normal precipitation amounts for a winter.

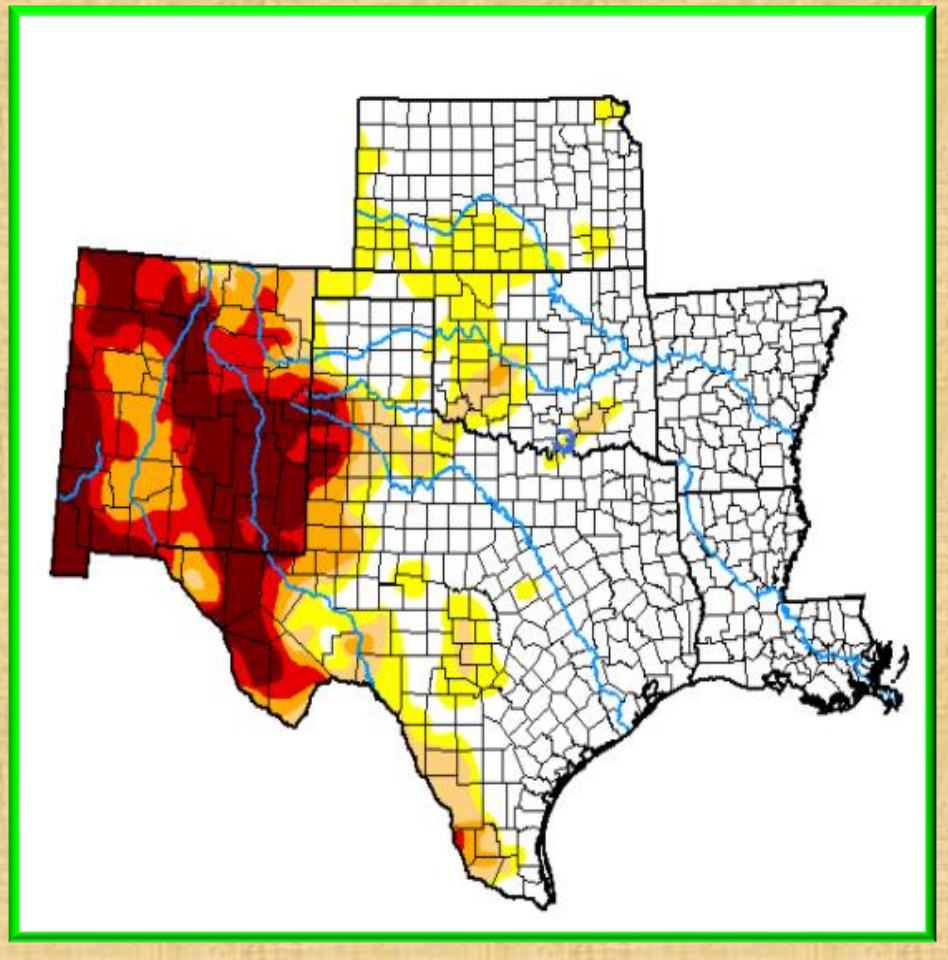
Current drought conditions and 3 month change

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

August 31, 2021



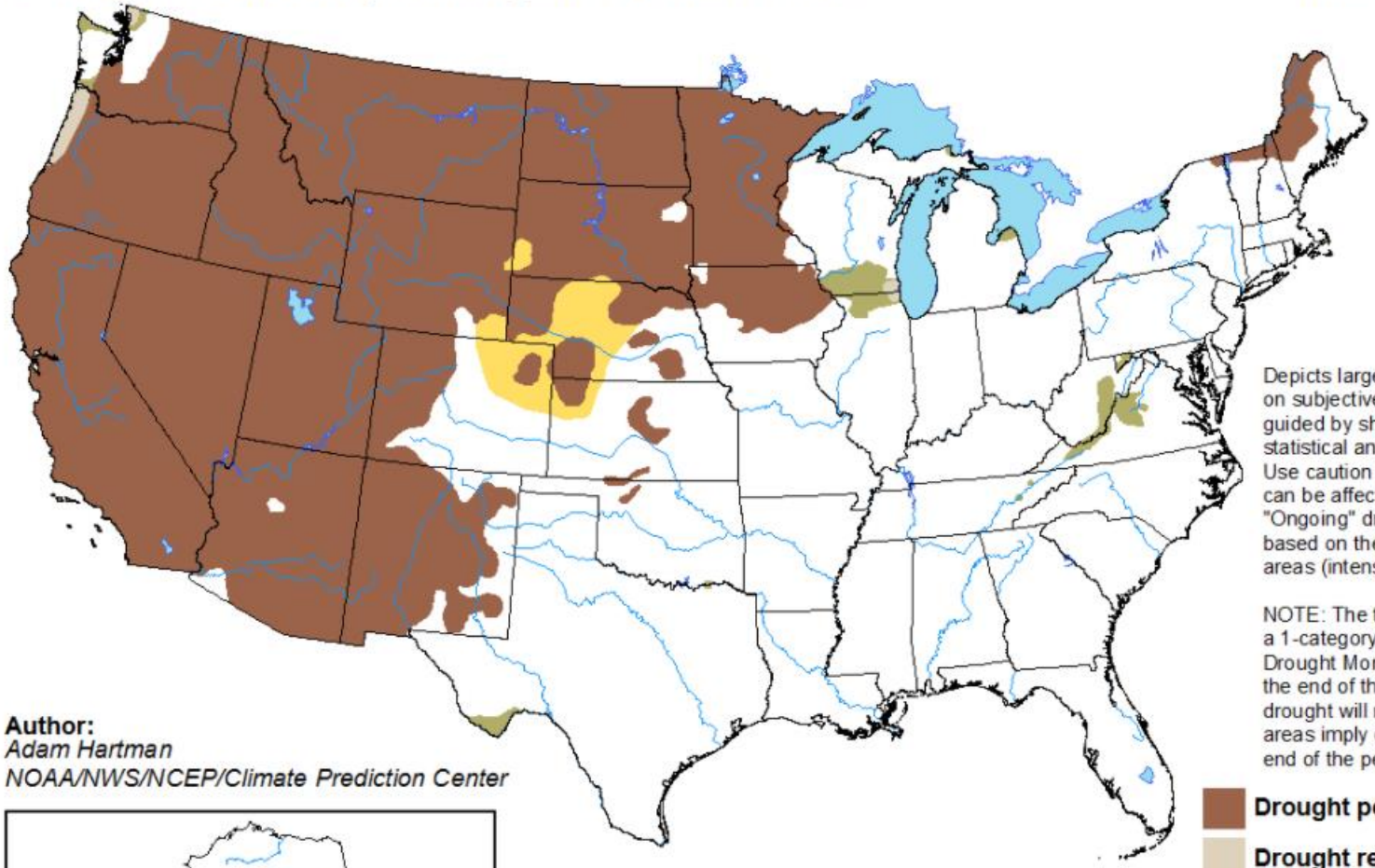
May 25, 2021



U.S. Seasonal Drought Outlook

Drought Tendency During the Valid Period

Valid for August 19 - November 30, 2021
Released August 19



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).

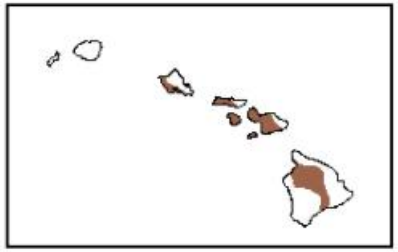
Drought persists

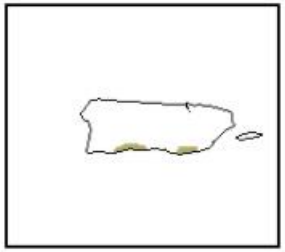
Drought remains but improve

Drought removal likely

Drought development likely

Author:
Adam Hartman
NOAA/NWS/NCEP/Climate Prediction Center

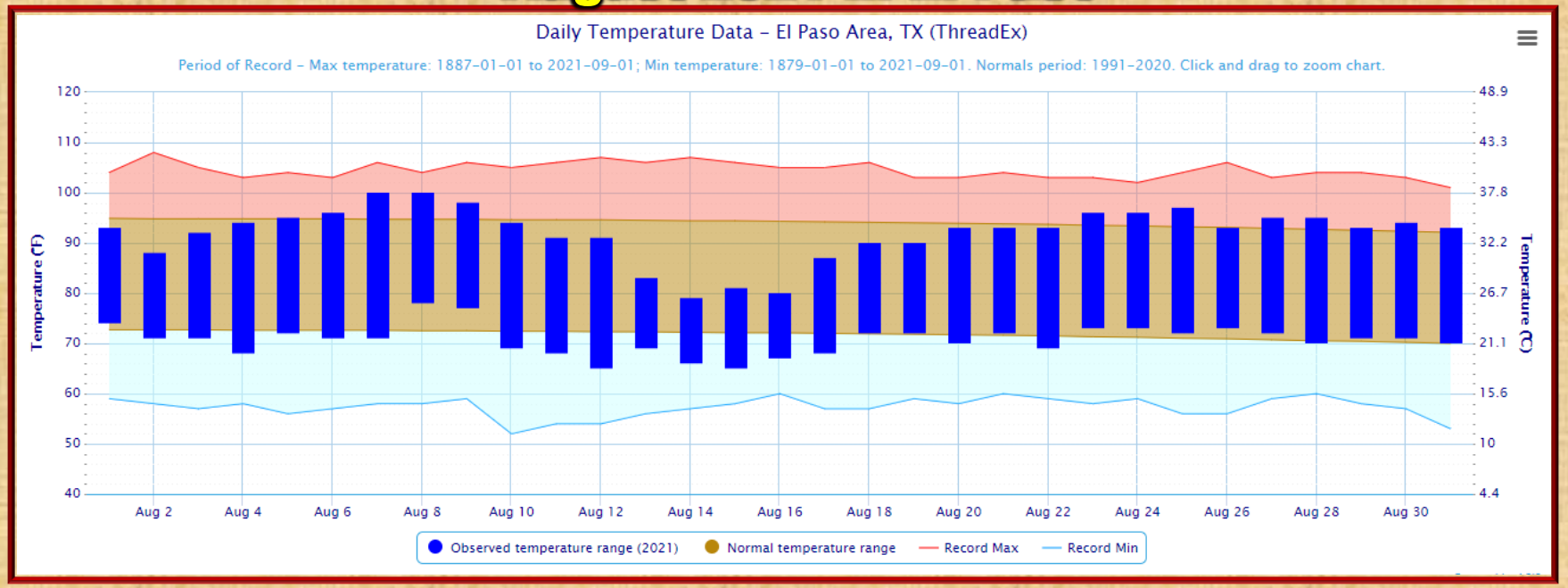


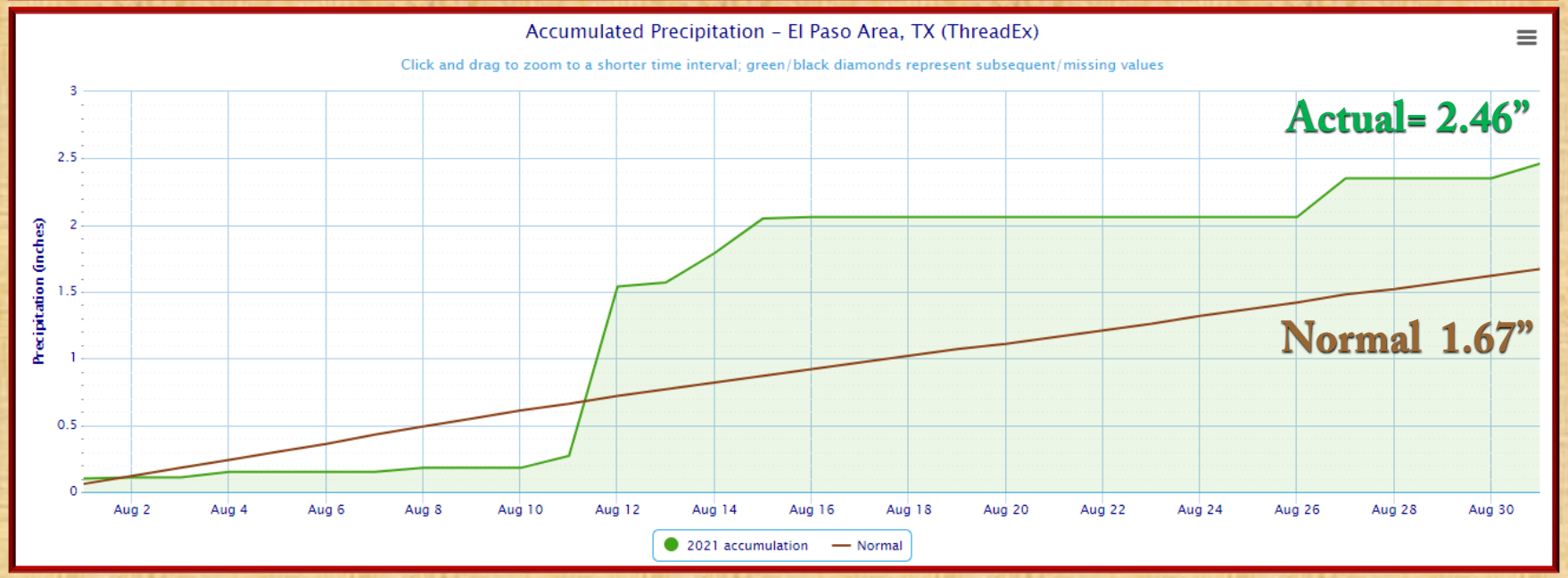


http://go.usa.gov/3eZ73

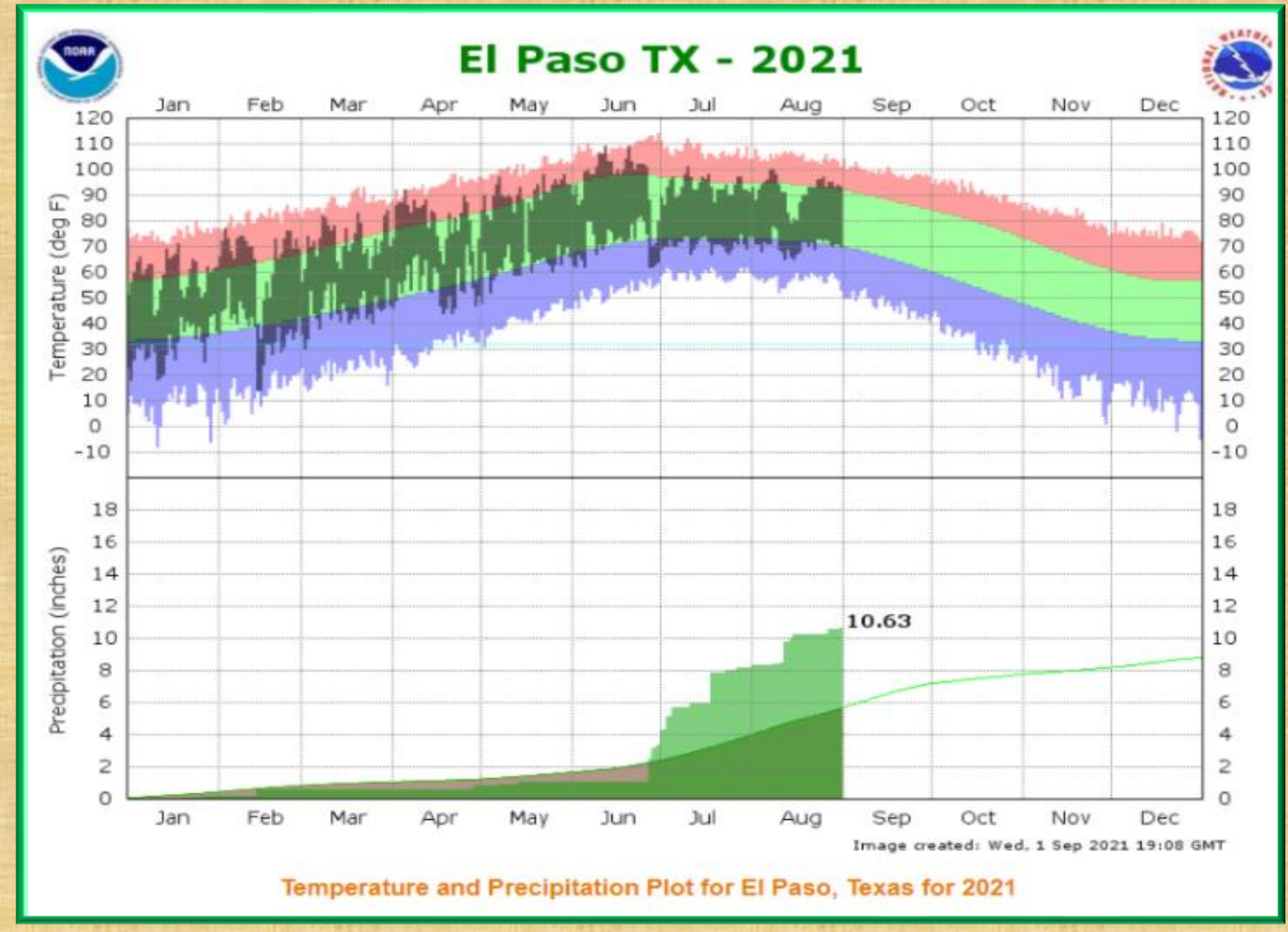
Temperature and precipitation data for August 2021 in El Paso

= record





2021: Temperature and Precipitation
YTD Data for El Paso



Temperature and Precipitation Plot for El Paso, Texas for 2021

Tracking the 2021 Monsoon Season across the El Paso Forecast Area

The long term average for the beginning of the Monsoon season normal begins around July 5, but it looks like this year the seasonal wind change pattern will begin the very last day or two of June. We use several parameters to judge the onset of the Monsoon from various studies. One important feature is the dewpoint. Persistent (>5 days) dewpoint temperatures above 50 degrees has occurred, beginning around June 29 or 30 [see fig. 1]. Another parameter to look at is sea surface temperatures in the northern Gulf of California [see fig. 2]. Studies have shown that temperatures of 26C in this area lead to an onset of the Monsoon within about 5-10 days. The temperature reached this mark around June 27 this year. The rain at the end of June was mostly pre-Monsoon as an upper low in the polar jet dropped over us. However, by the last day or two of June this low moved off and then the Bermuda high pressure cell extended westward to the Desert Southwest [see fig. 1], thus beginning the upper pattern of the Monsoon. Finally, the Outgoing Longwave Radiation and Satellite Precipitation maps [see fig. 5] from late June showed that widespread convection/rainfall had spread from the Sierra Madre Occidentals and northern Mexico up over New Mexico and west Texas.

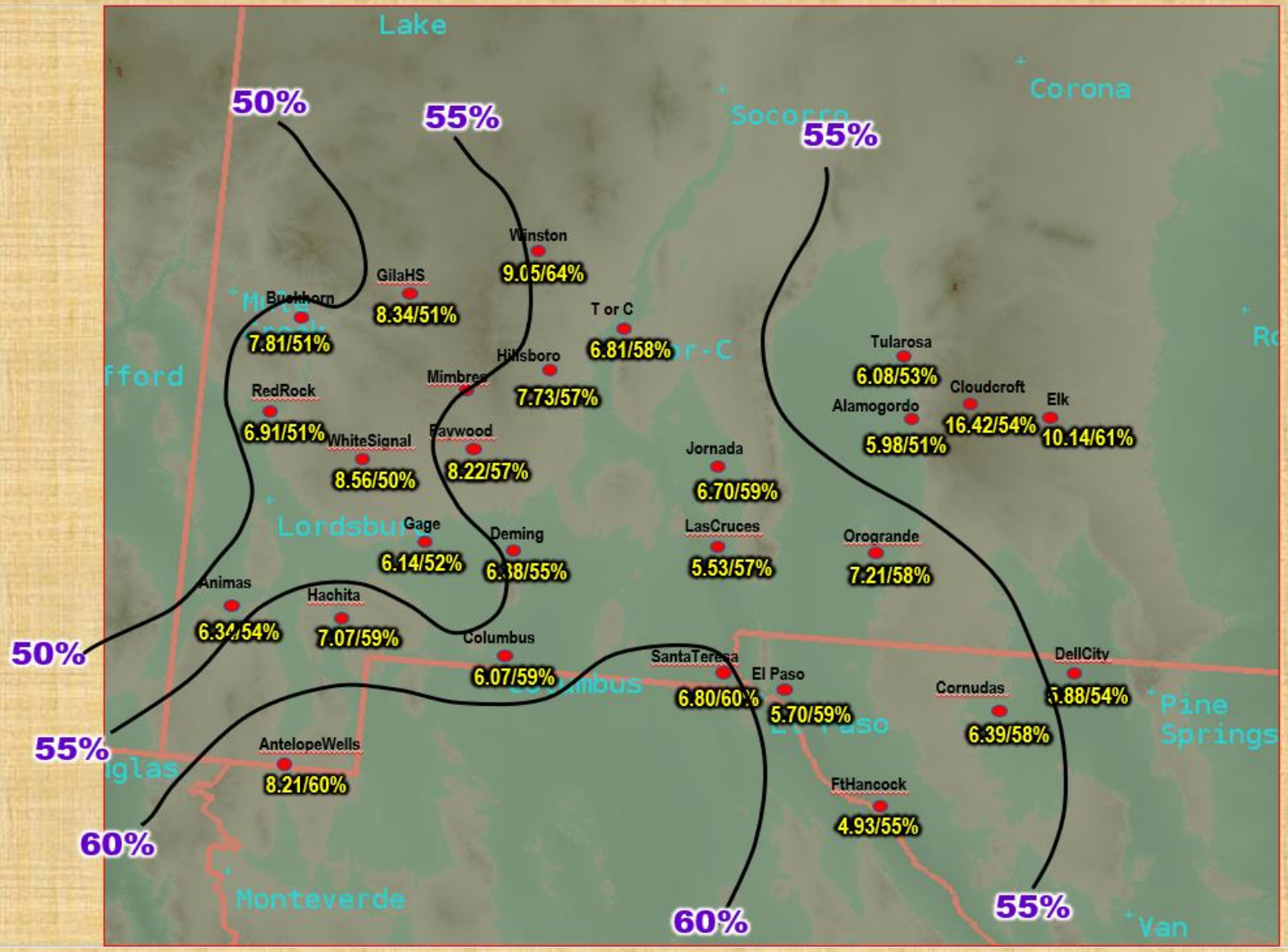
The monsoon rainfall kicked into high gear for much of July, especially east of the Continental Divide. Most of southern New Mexico and west Texas from the Rio Grande Valley east received about 150-400 percent of normal, while areas to the west were around 75-150 percent of normal. From more research, it has been found that from the date that which the northern Gulf of California sea surface temperature reaches 29C to the end of the Monsoon season (Sep 30) we will receive around 50-70% of our seasonal rainfall total. In other words from from June 15 to the day of 29C in the Gulf of California (July 16 this year), we will receive around one-third to one-half of our total, with the other half to two-thirds falling after that date. [See Figs 3-4]

Tracking the 2021 Monsoon Season (cont'd)

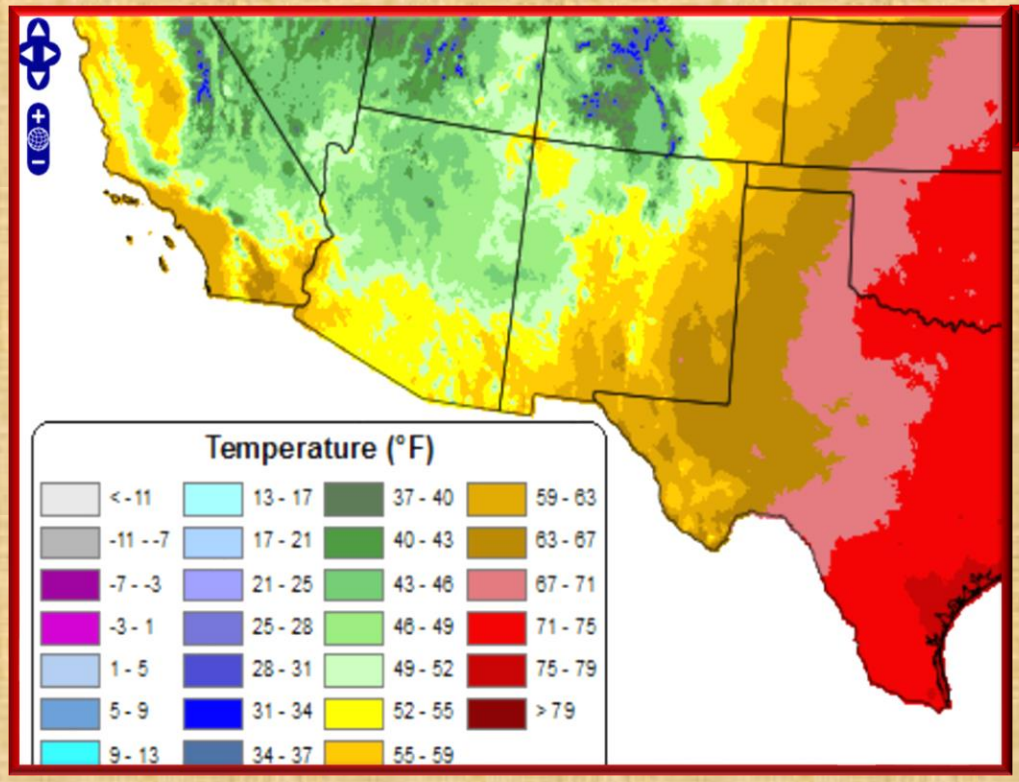
Tracking the Monsoon season through August, we saw that the unseasonably wet season continue, and finally the far west got in on the action. The majority of the area received from 125 to 300 percent of normal, and this included much of the area west of the Continental Divide. This Monsoon season should go along way toward easing the drought of the past couple of years.

As we head into September, we reach the end of the Monsoon season (nearly every year). The normal ending to the season averages around September 23, though our official season runs to the end of the month. Looking at Fig. 6, we can see as of the end of August, dewpoint temperatures and the upper flow pattern were both still in mid Monsoon form. Both of these parameters, when examined, are good indicators of when the Monsoon season is ending. Once dewpoint temperatures decrease back under 50 degrees for a stretch of time the season is near the end. This normally occurs around the last week of September, though can stretch out into early October. The upper air pattern usually switches back to the fall/winter pattern around the same time.

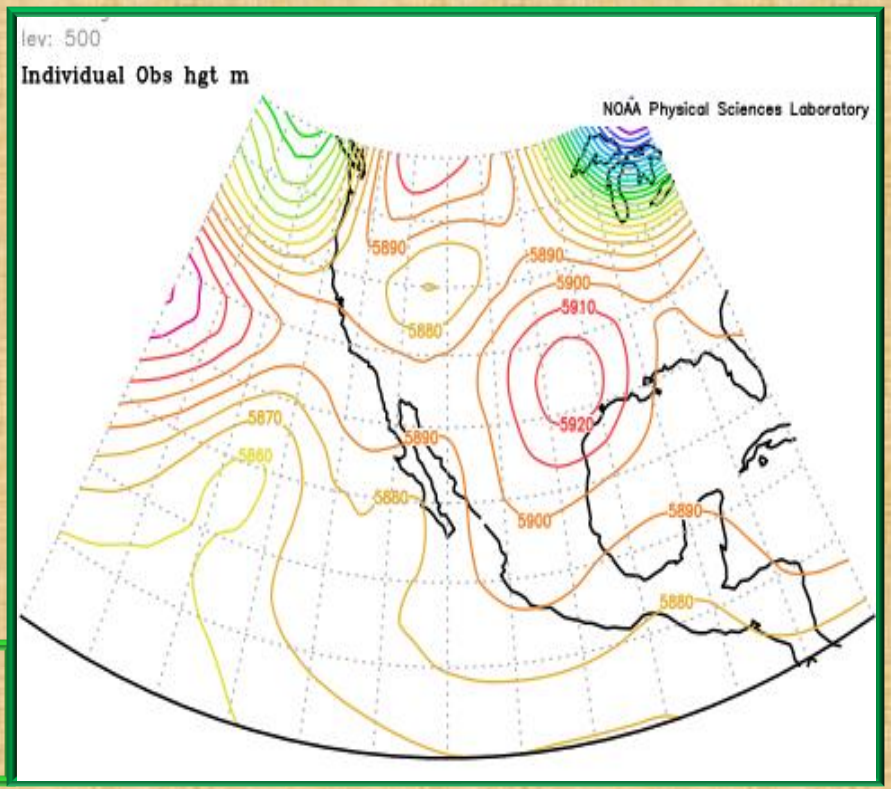
Tracking Percent of Annual Precipitation Falling During the Monsoon Season (Jun15-Sep 30)



Tracking the 2021 Monsoon Season across the El Paso Forecast Area. Fig 1

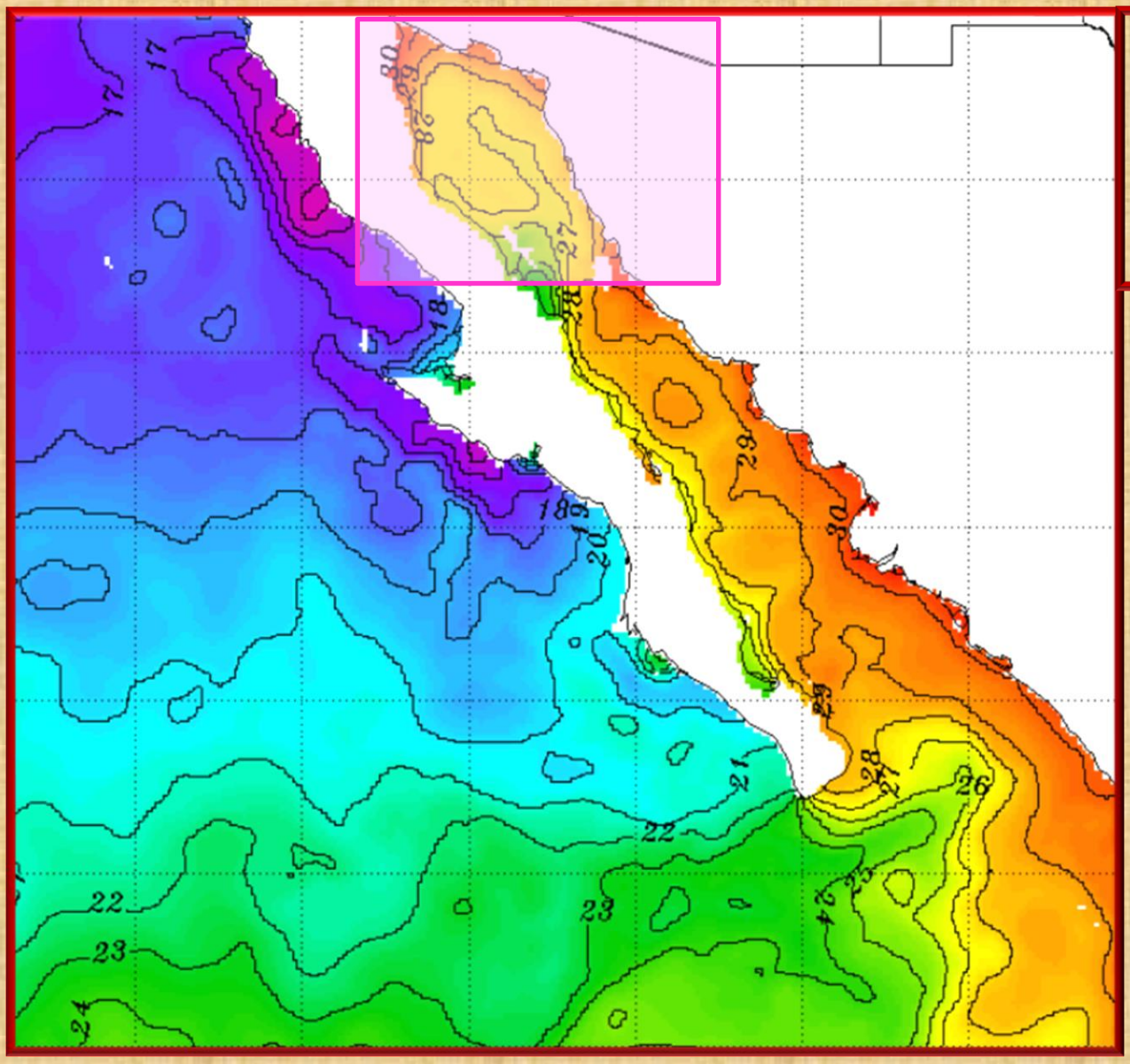


June 30 – Dewpoints reach into the 50s across the area



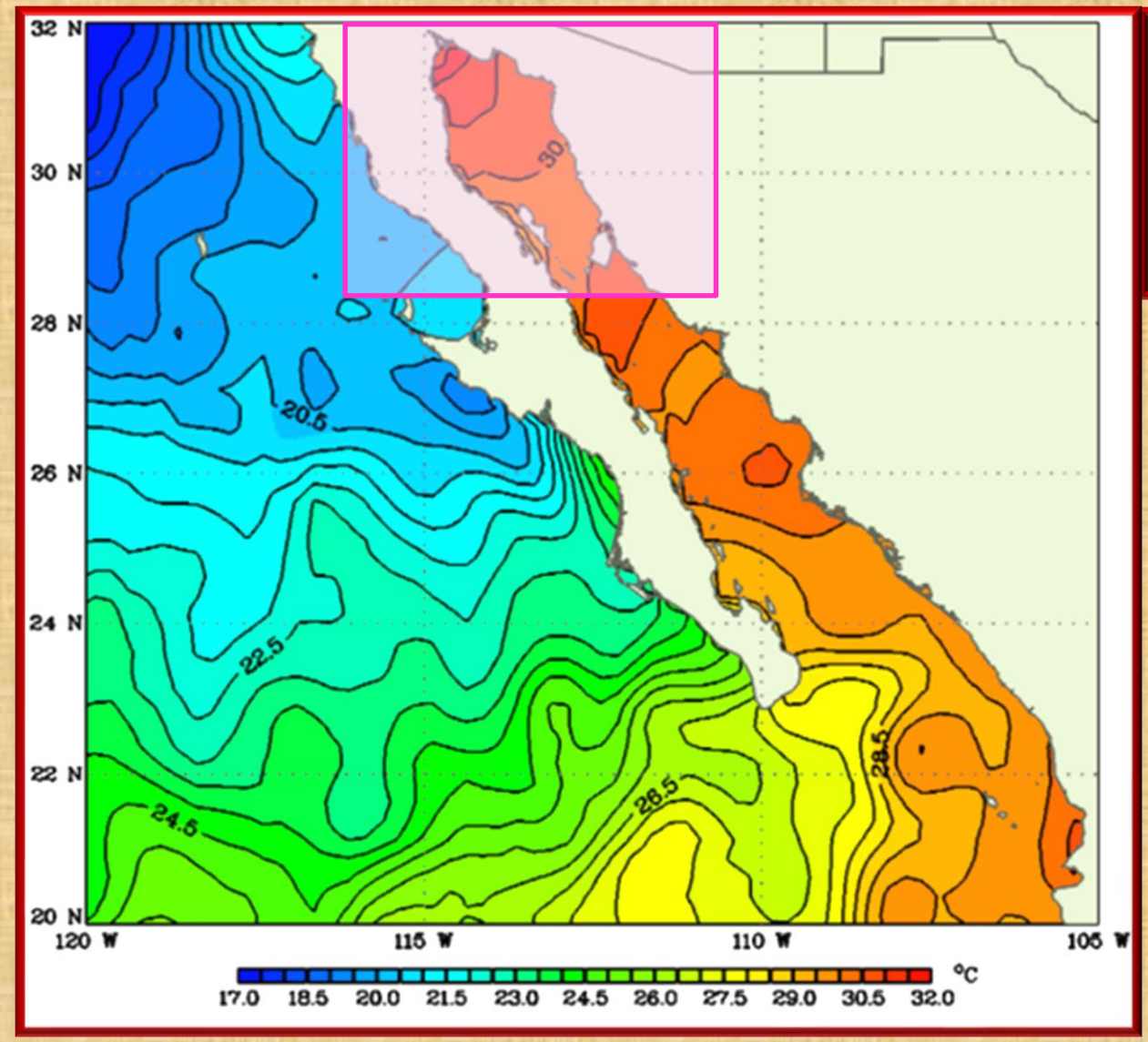
By July 2, 500mb sub-tropical high reaches the Desert Southwest

Tracking the 2021 Monsoon Season across the El Paso Forecast Area. Fig. 2



June 27 – Sea surface temperatures in the northern Gulf of California reach 26C deg (79F)

Tracking the 2021 Monsoon Season across the El Paso Forecast Area. Fig. 3



July 16 – Sea surface temperatures in the northern Gulf of California reach 29C deg (84F)

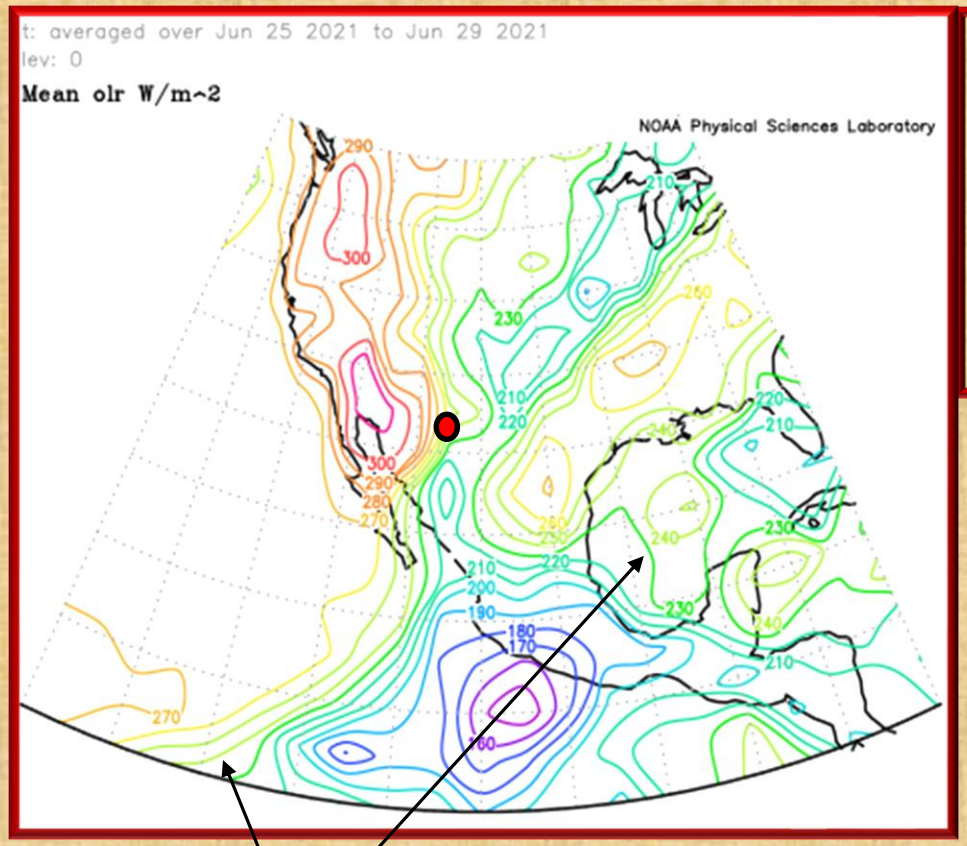
Fig. 4

	50-80% (68%)	50-80% (66%)	50-70% (62%)	50-80% (73%)	50-80% (69%)
Date of 29C GOC=July 16	ELP	DMN	CLD	TCS	HIL
Precip Jun 15 – Jul 16	4.91"	1.15"	7.69"	2.39"	2.94"
Pct of Normal	396%	93%	188%	266%	207%
Fcst precip Jul 17 – Sep 30	4.91"-19.50"	1.15"-4.60"	7.69"-17.94"	2.39"-9.56"	2.94"-11.76
Total for Monsoon Season	9.80"-23.40"	2.30"-5.75"	15.40"-25.60"	4.80"-11.90"	5.90"-14.70"
Normal for Monsoon Season	5.27"	5.48"	15.28"	5.38"	7.01"

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

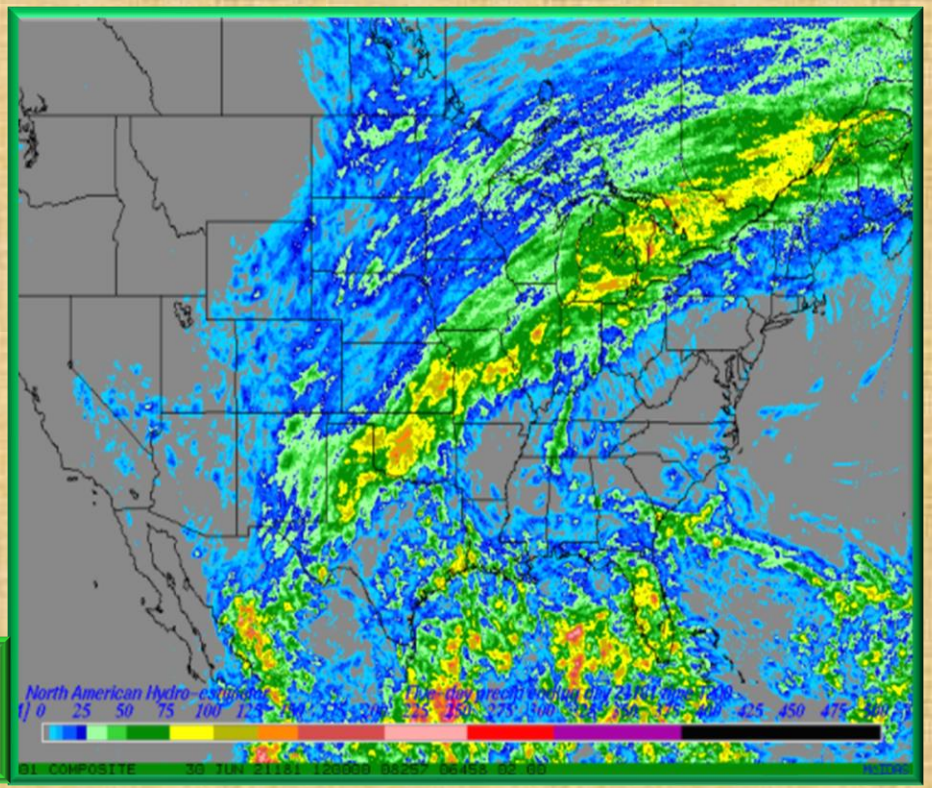
The northern Gulf of California sea surface temperature reached 29C on July 16. Research has shown that around 50-75% of the total Monsoon rainfall will fall after that date. Given that most of the sites listed above are well above normal, 50% is probably a reasonable forecast. Therefore the sites above are likely to double the rainfall values of June 15 through July 16.

Tracking the 2021 Monsoon Season across the El Paso Forecast Area. Fig. 5



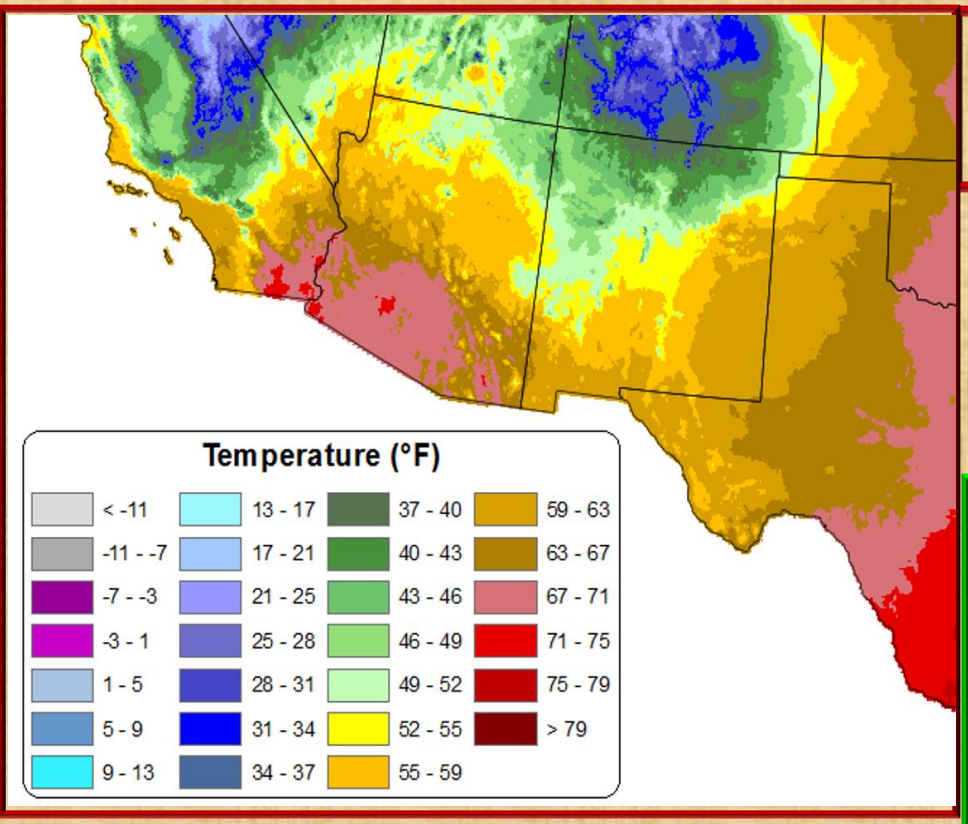
June29 – Outgoing Longwave Radiation (OLR) diminishes to less than 240 W/m^2 Thick clouds and anvil tops from thunderstorms diminish the OLR values, often indicative of the monsoon moisture and thunderstorms moving into the area. (Pentad data Jun 25-29)

Lime Green lines=230

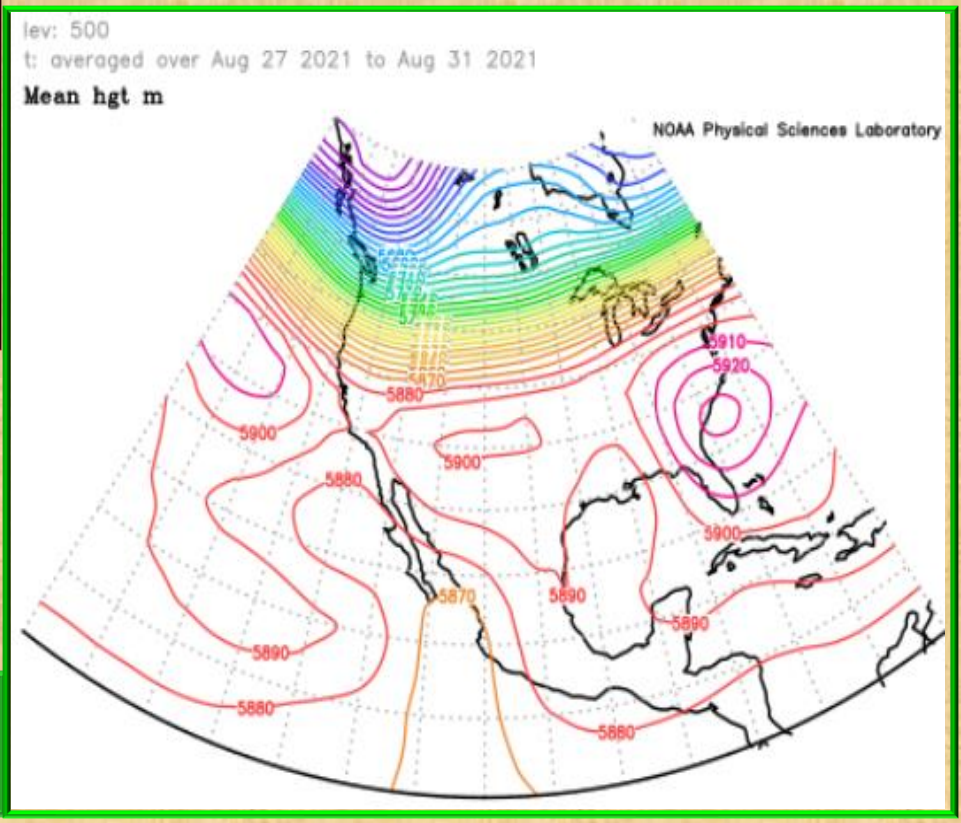


By June 26-30 the first area wide Monsoon precipitation occurs

Tracking the 2021 Monsoon Season across the El Paso Forecast Area. Fig. 6



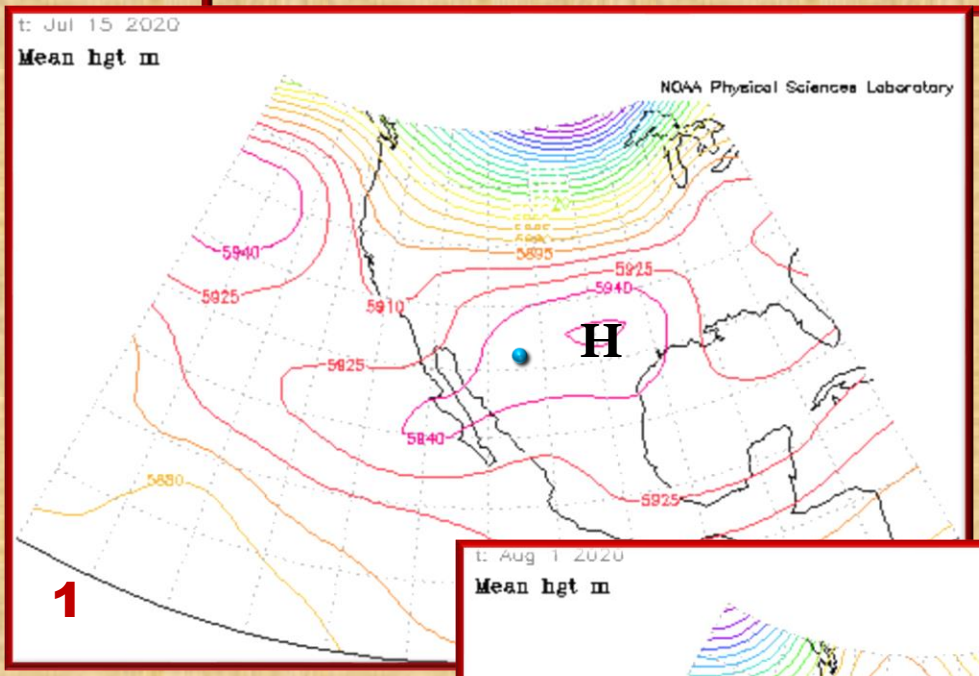
Aug 31 – Surface dewpoints still well into the 50s (deg) across the vast majority of the Desert Southwest

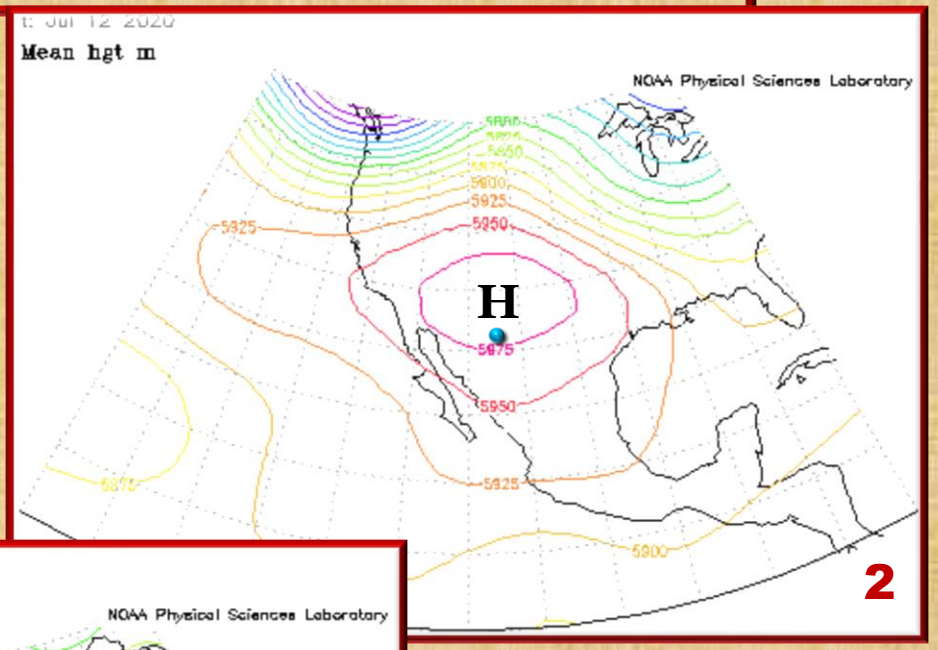


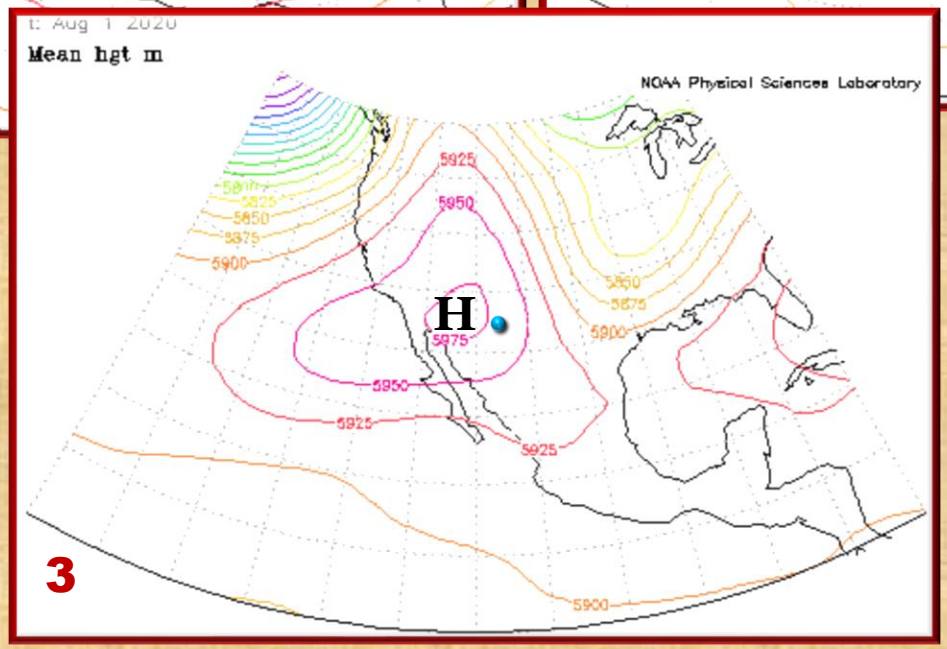
Aug 31 – Upper flow still showing typical monsoon pattern

Tracking the 2021 Monsoon Season across the El Paso Forecast Area. Fig. 7

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





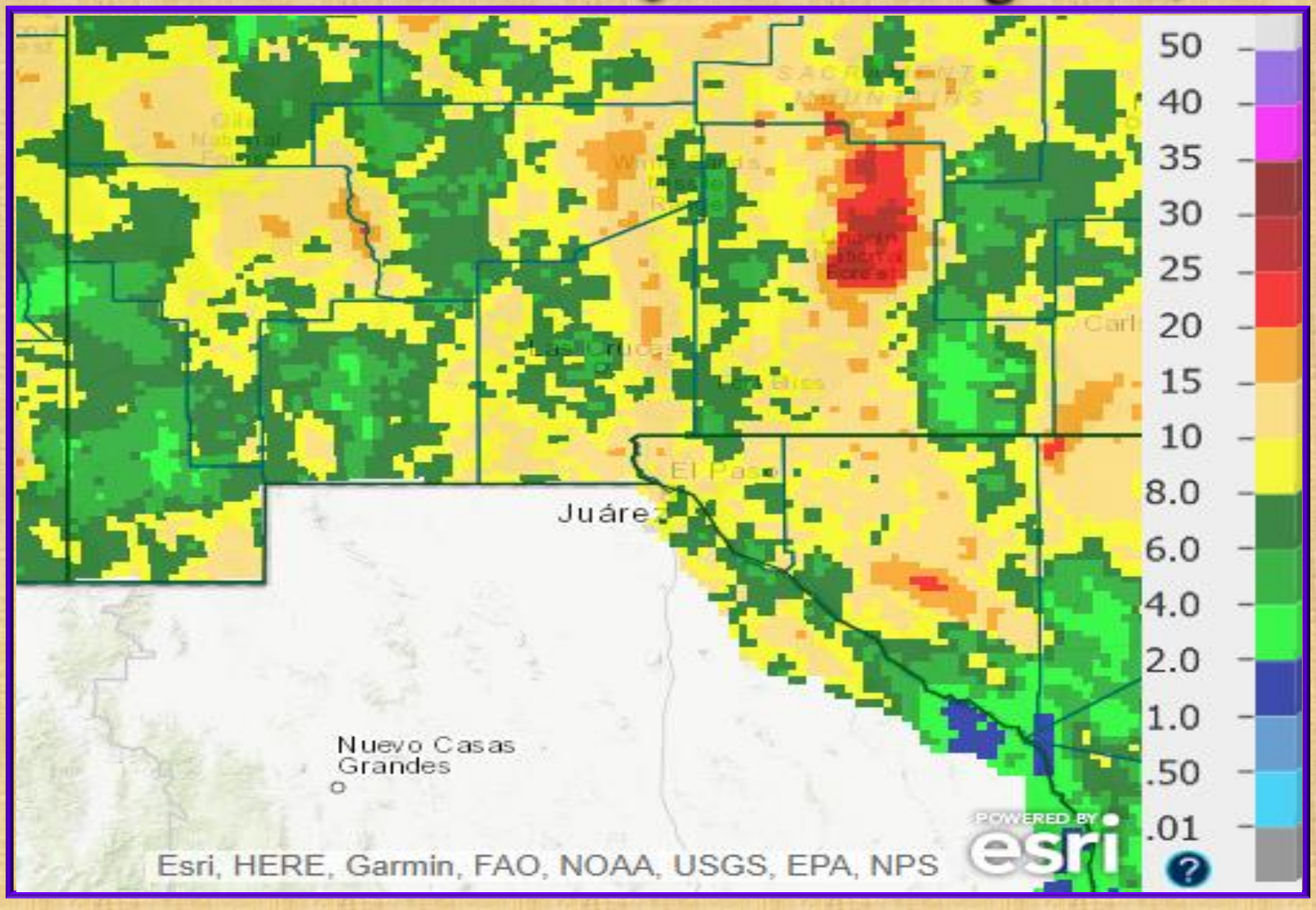


No. 1 High center east of New Mexico. Often brings ample tropical moisture and widespread heavy rain and flooding to the area

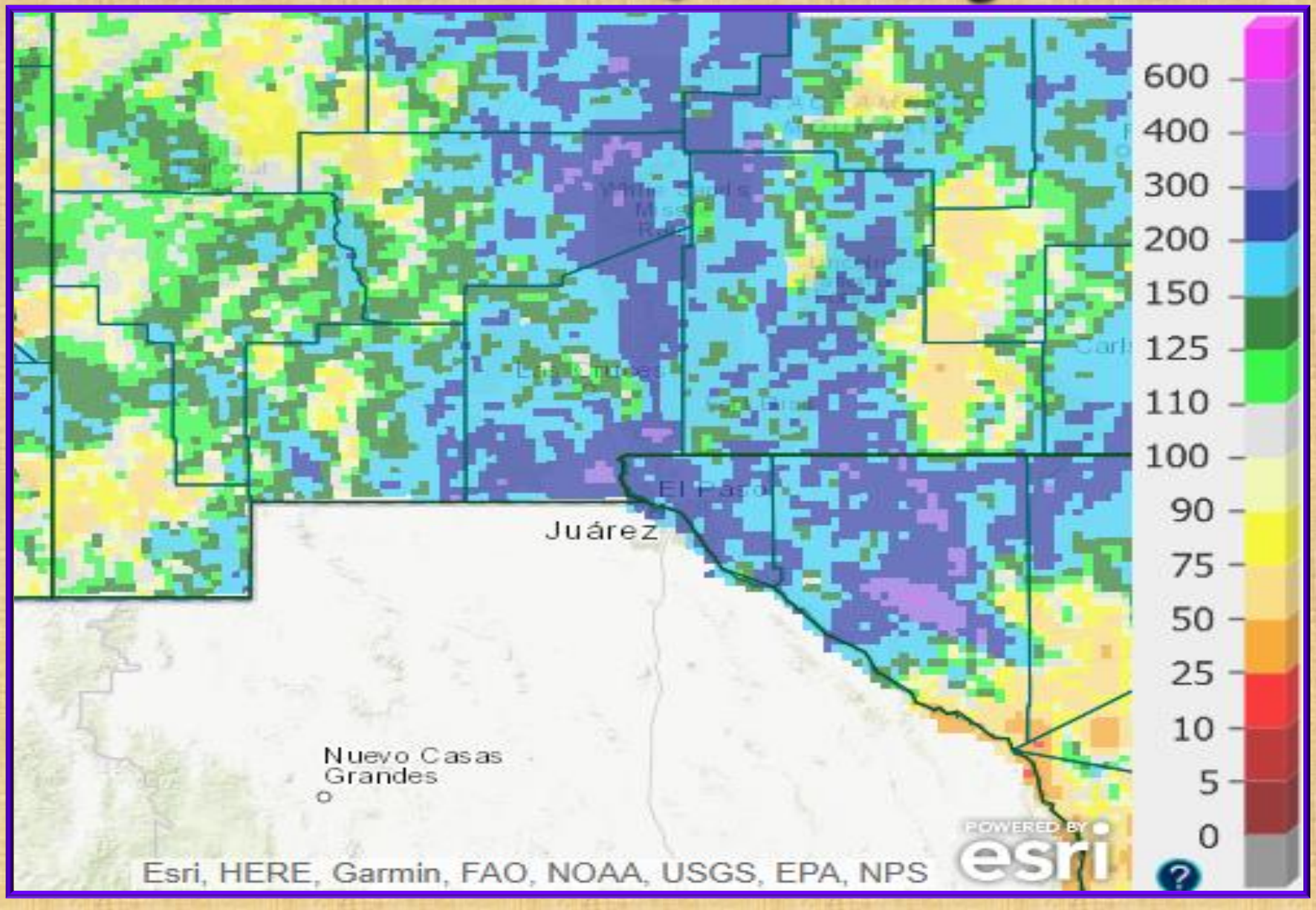
No. 2 High center over New Mexico. Often brings very hot temperatures and little if any rain (usually limited to the mountains).

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.

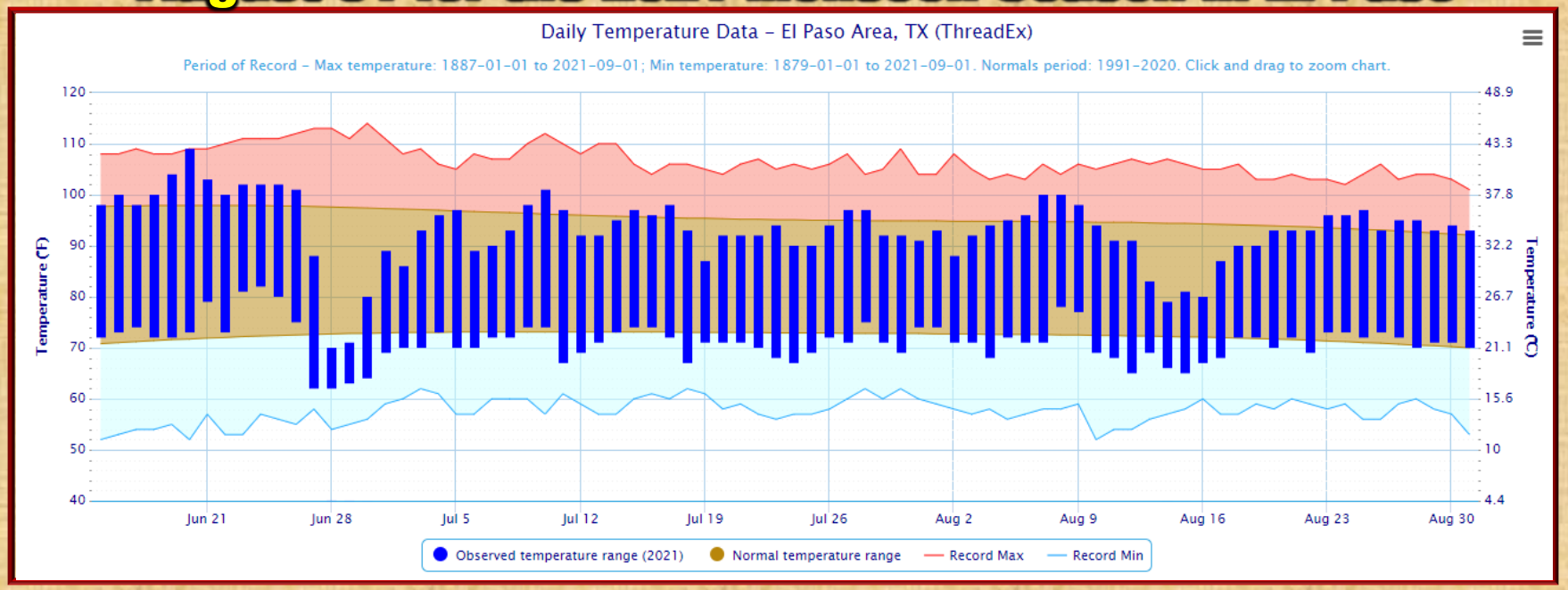
Radar rainfall estimate for the Monsoon Season 2021 (June 15 – August 31)

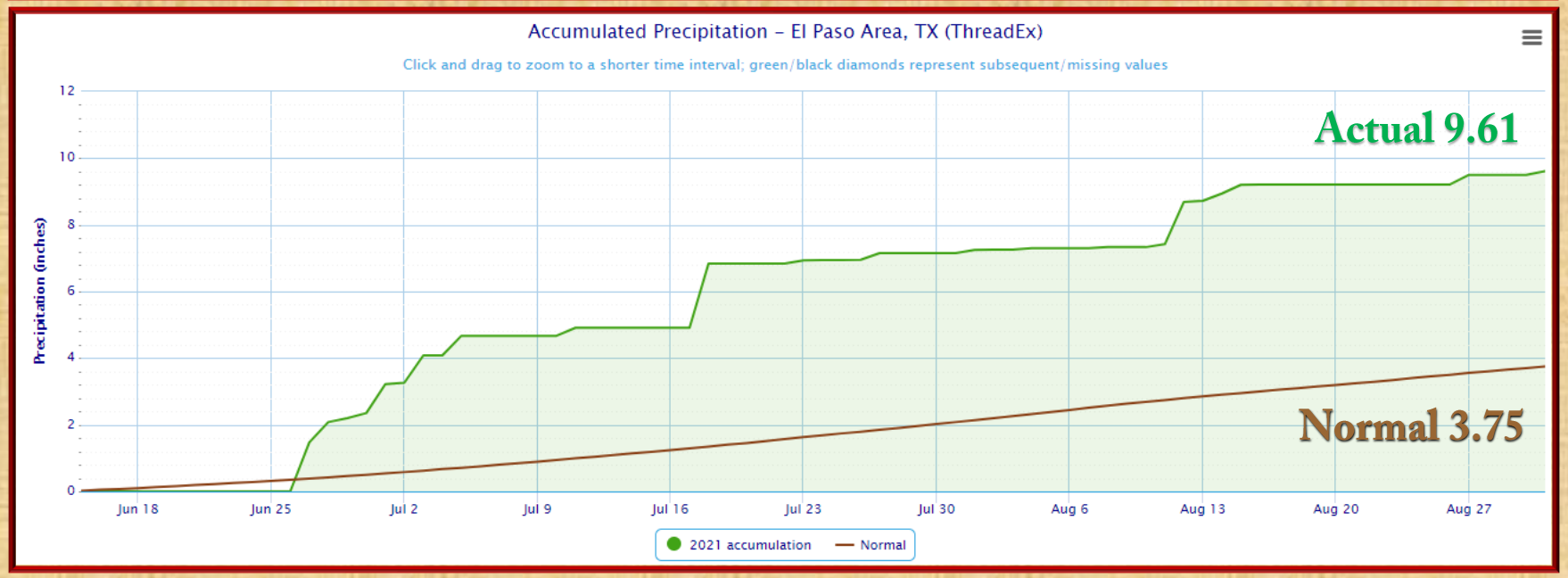


Radar rainfall estimate percent of normal for Monsoon season 2021 (June 15-August 31)



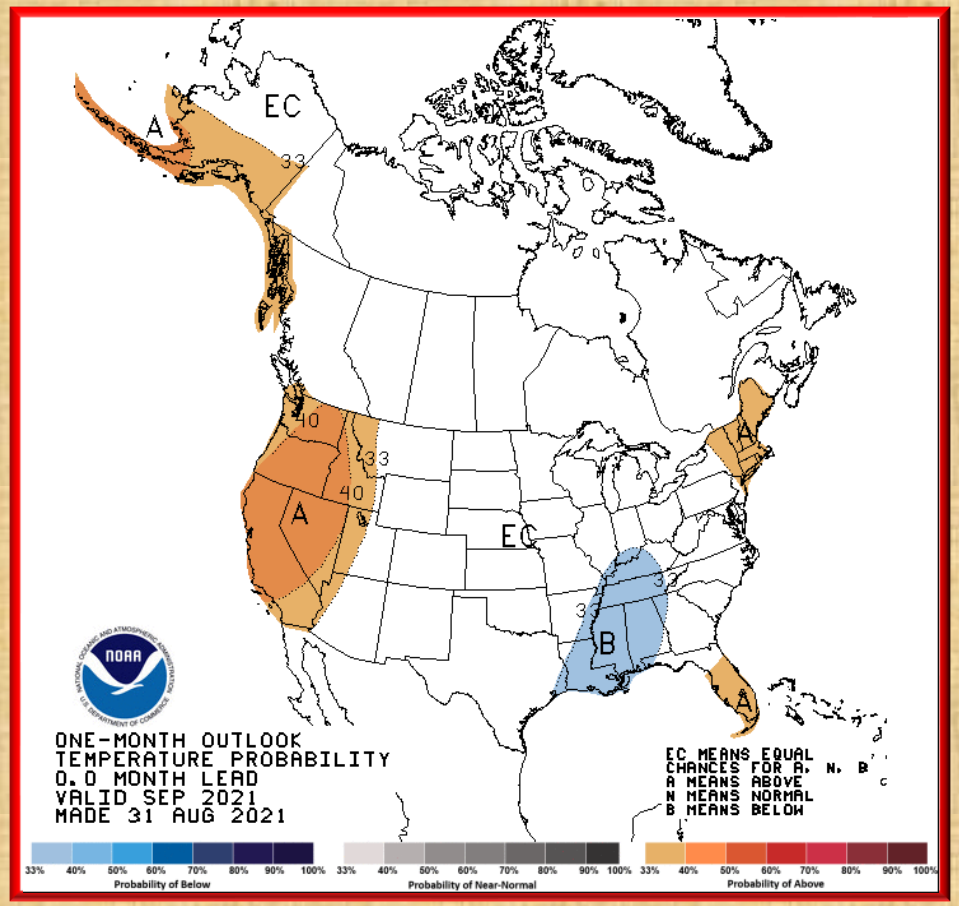
Temperature and precipitation data through August 31 for the 2021 Monsoon Season in El Paso



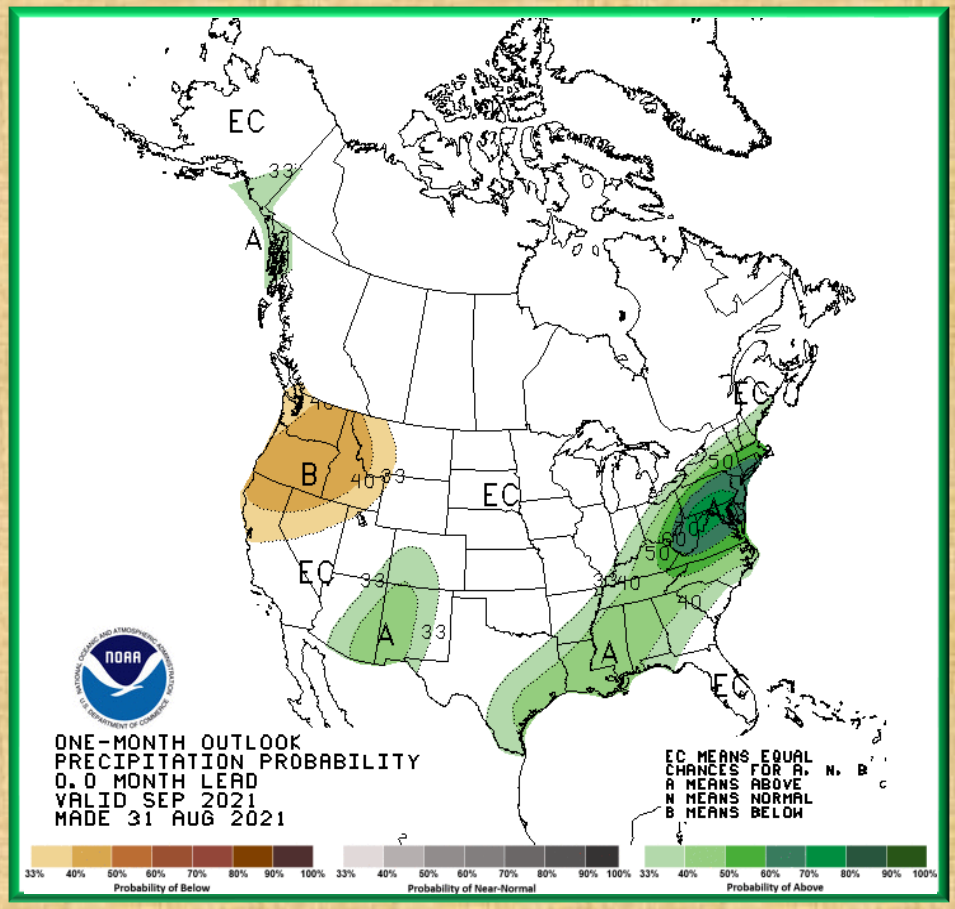


Temperature and precipitation outlook for September 2021

Temperature

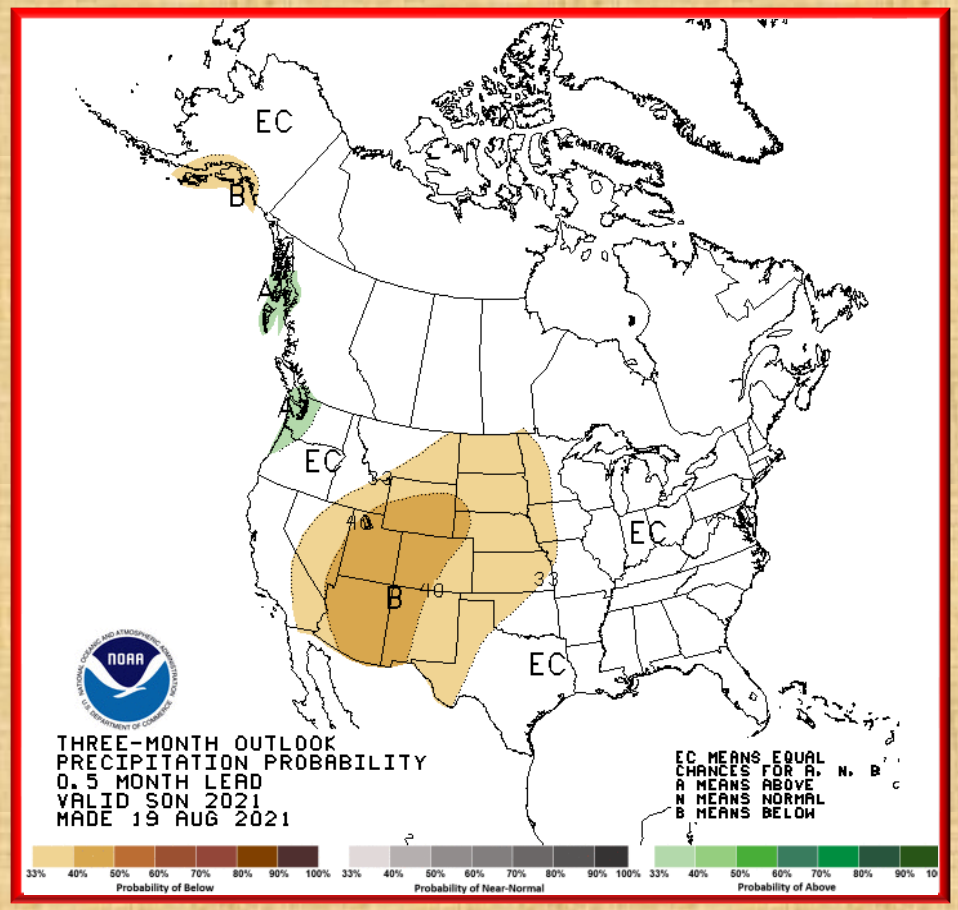


Precipitation

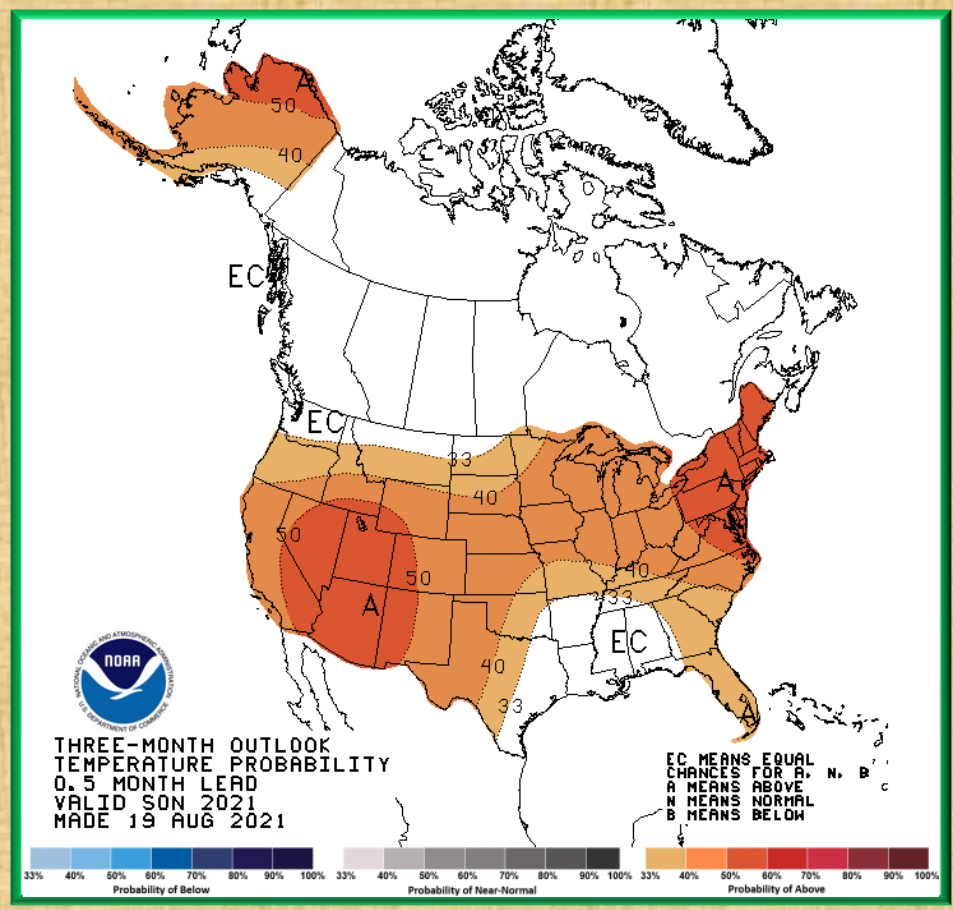


Temperature and precipitation outlook For September-November 2021

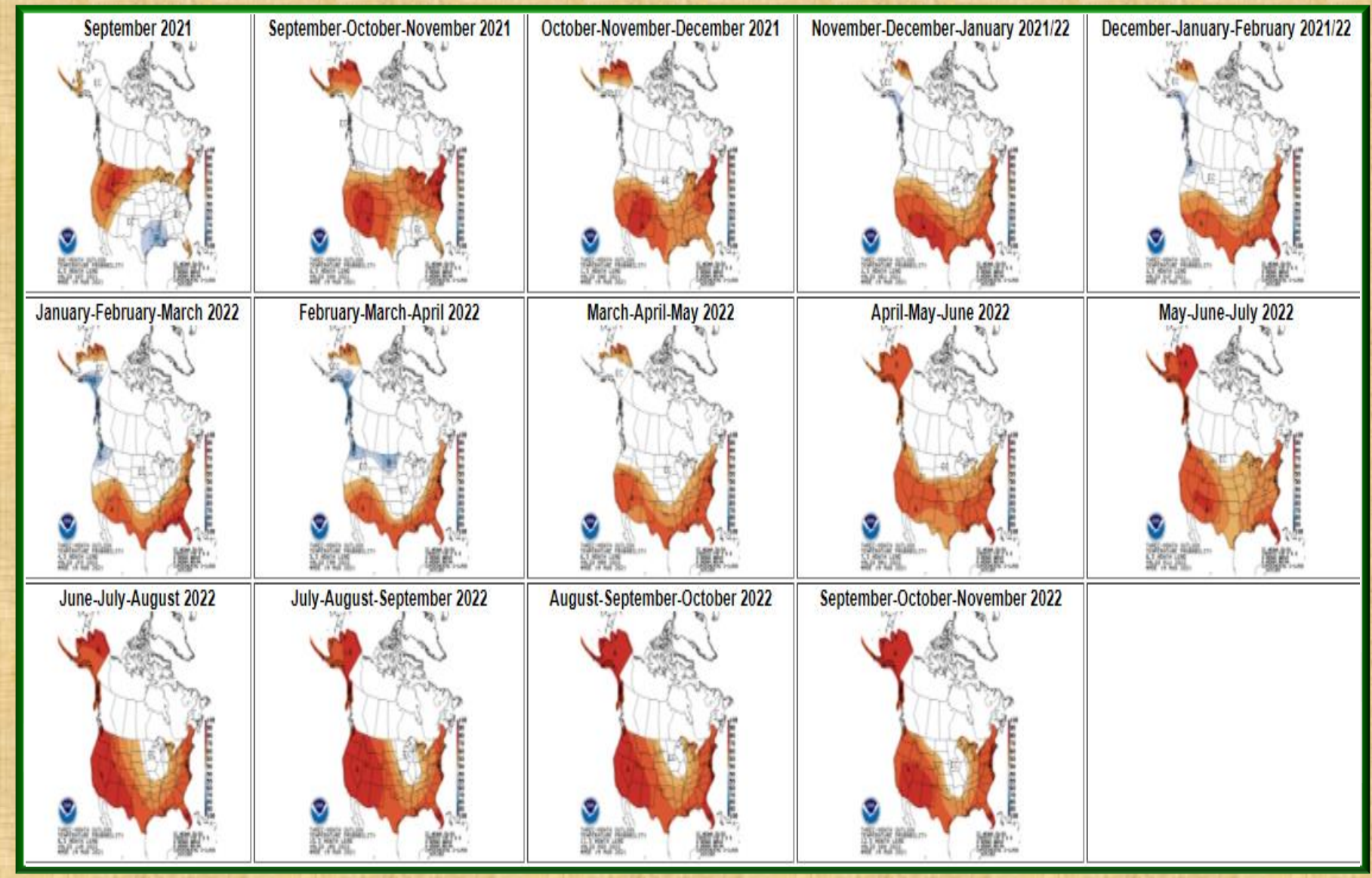
Temperature



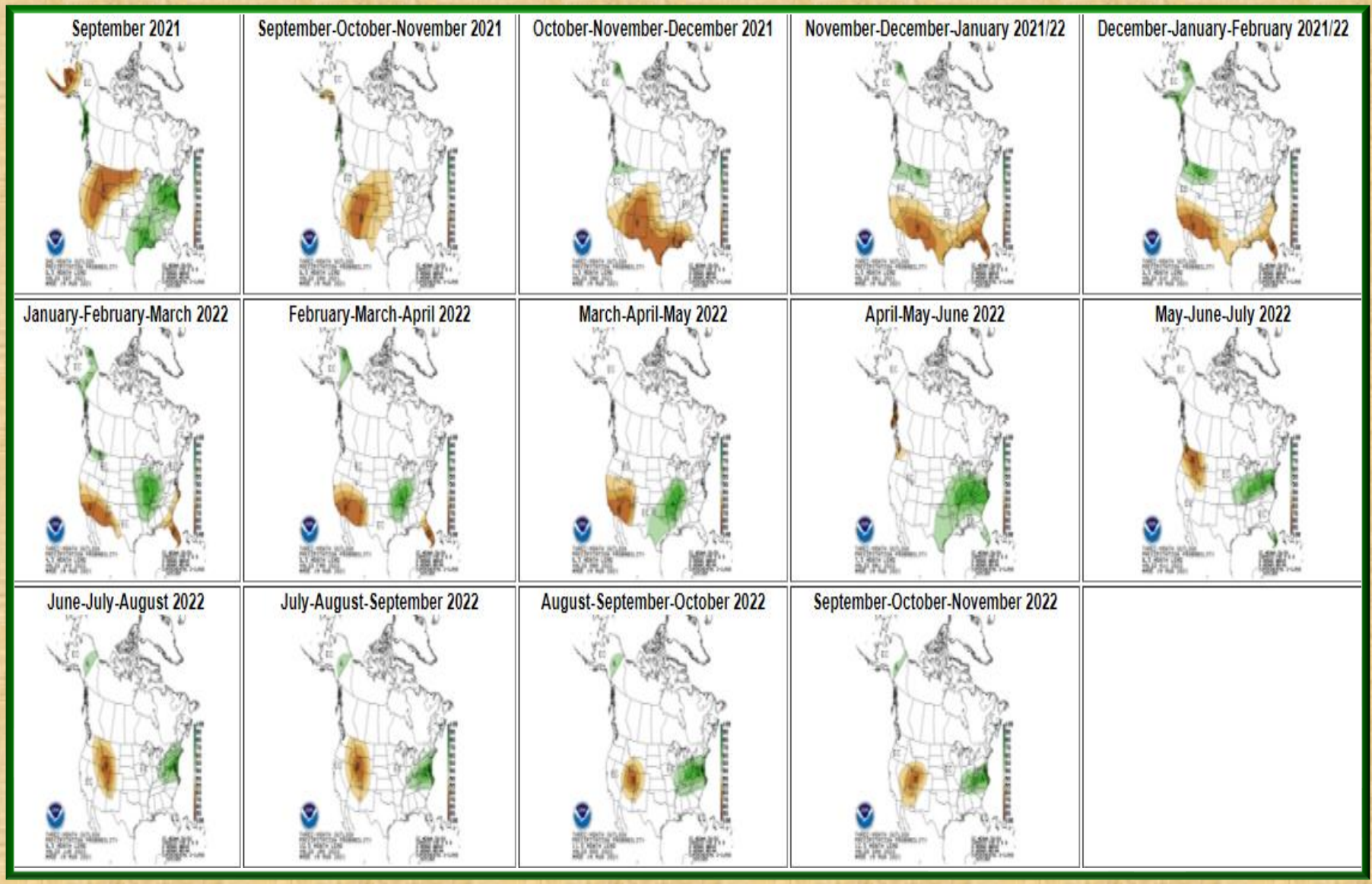
Precipitation



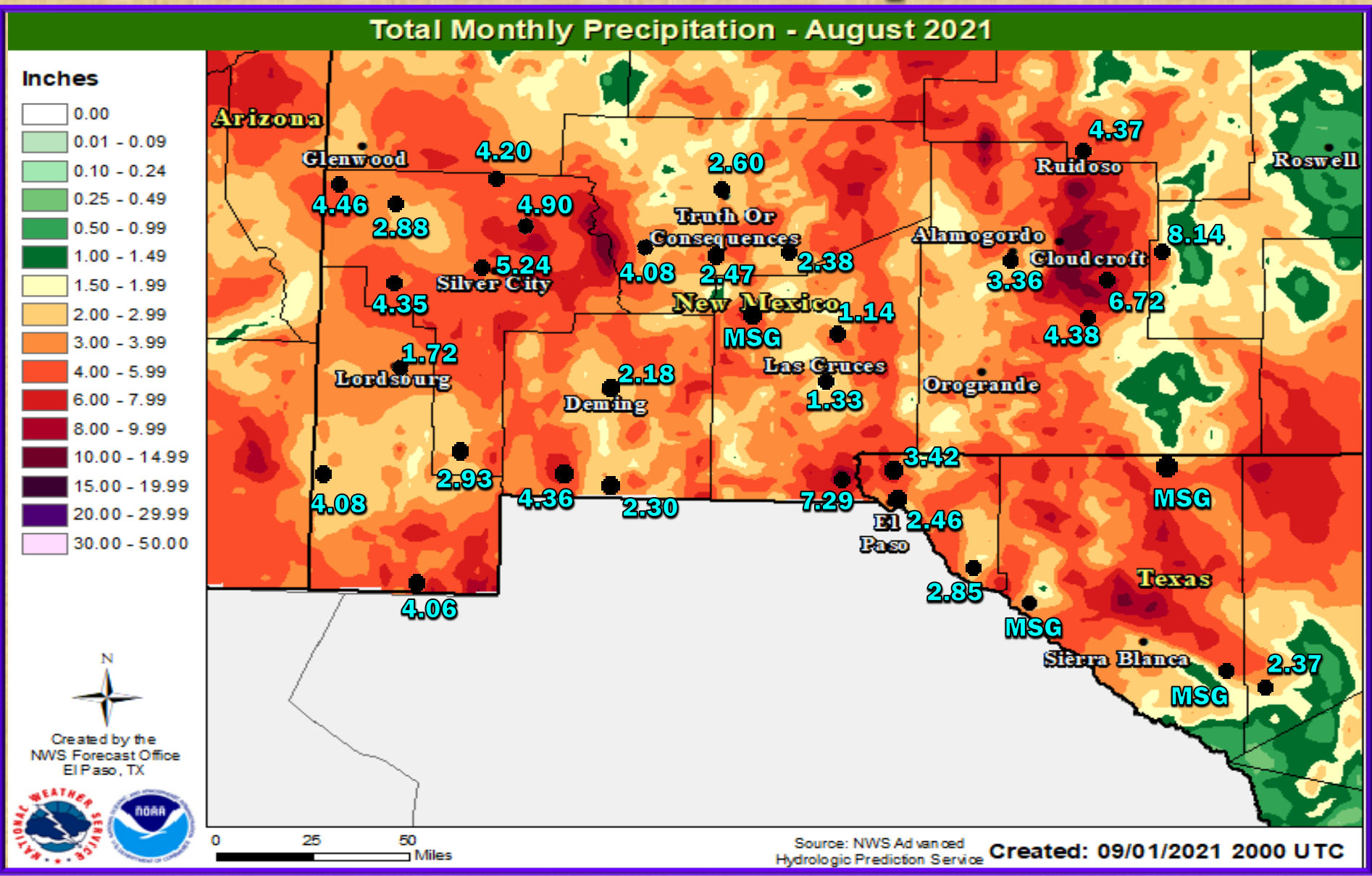
Temperature Outlook Through November 2022



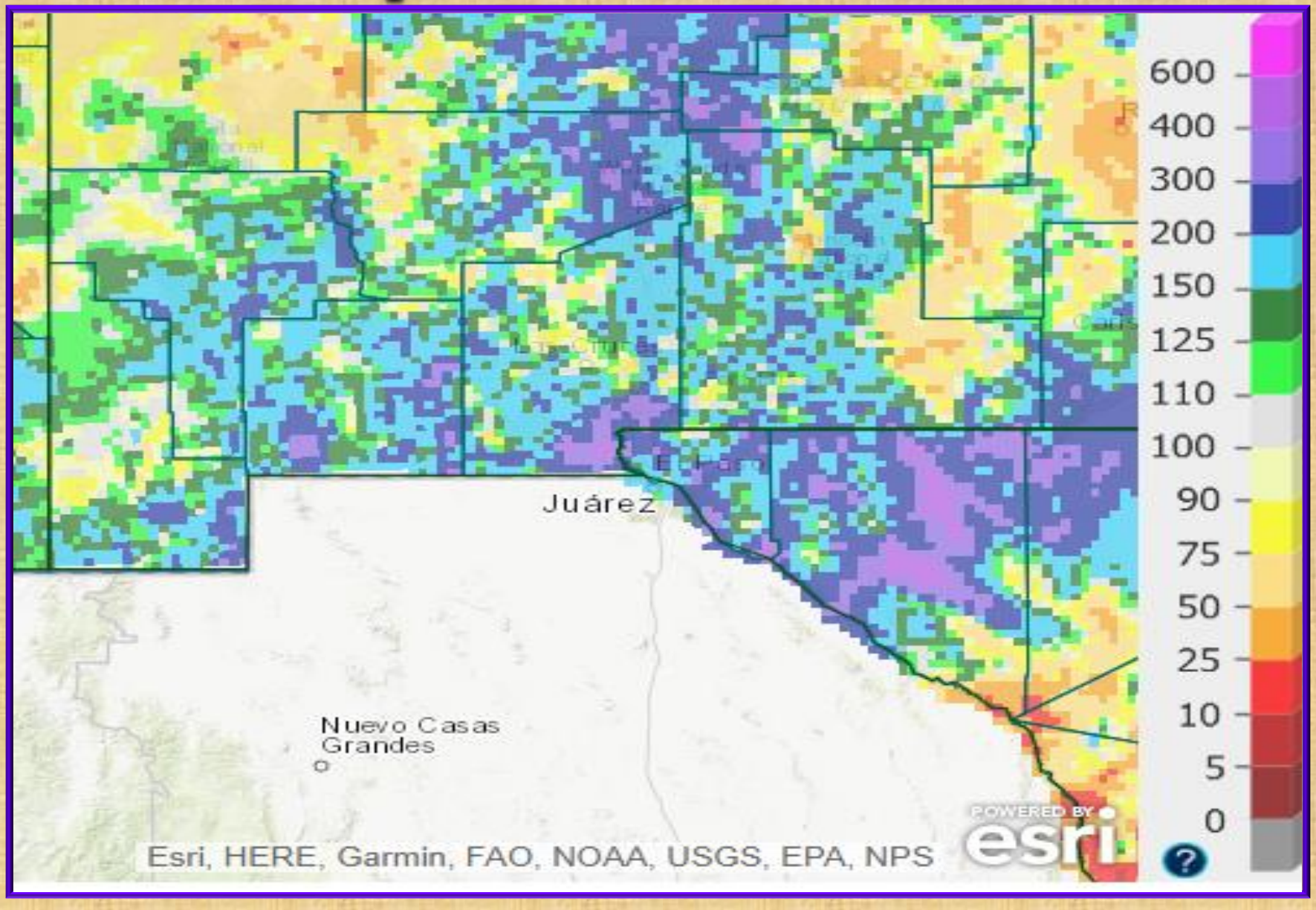
Precipitation Outlook Through November 2022



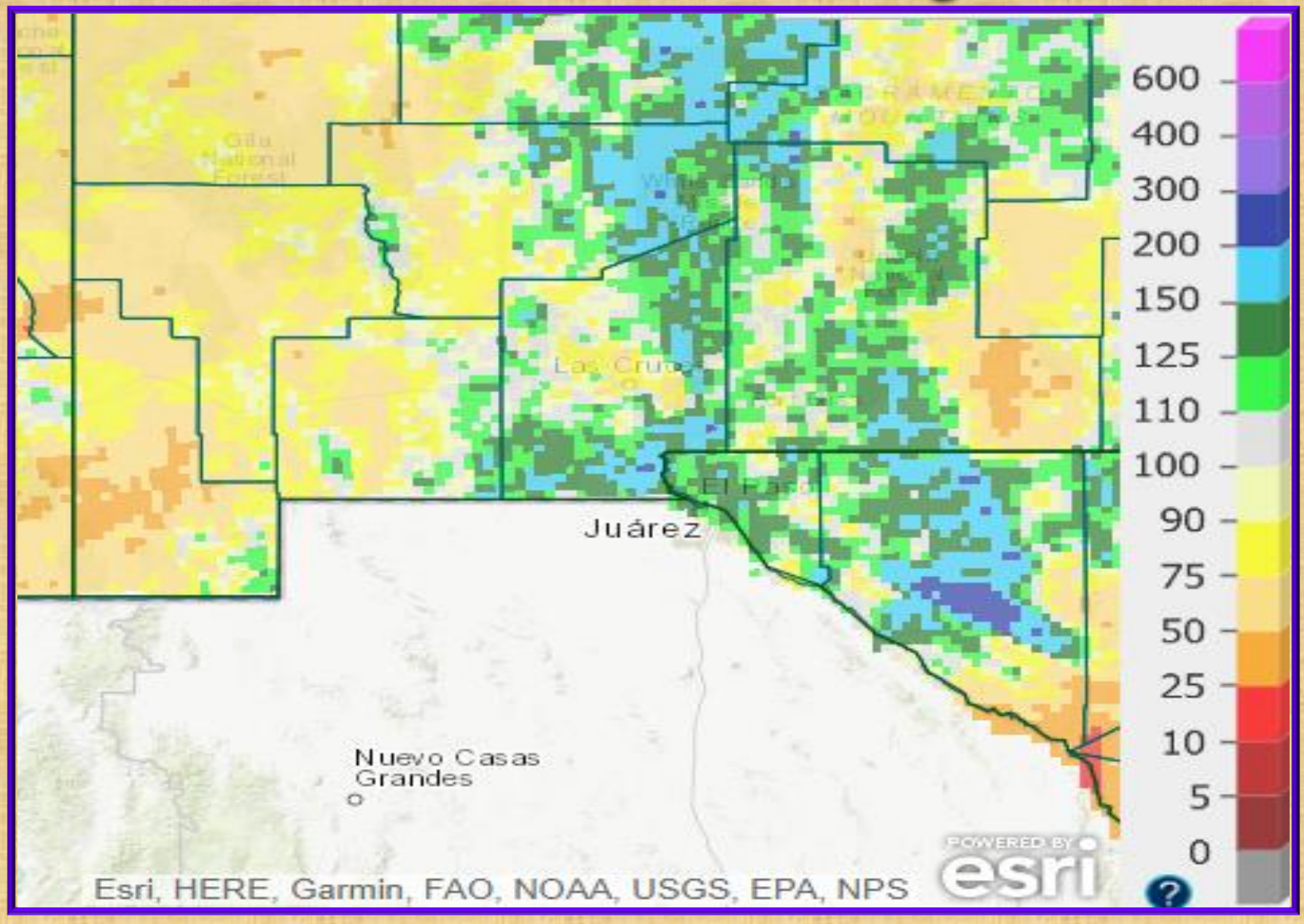
August 2021 radar rainfall estimate with surface rainfall reports



August 2021 radar rainfall estimate percent of normal



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



Selected Weather Reports August 2021

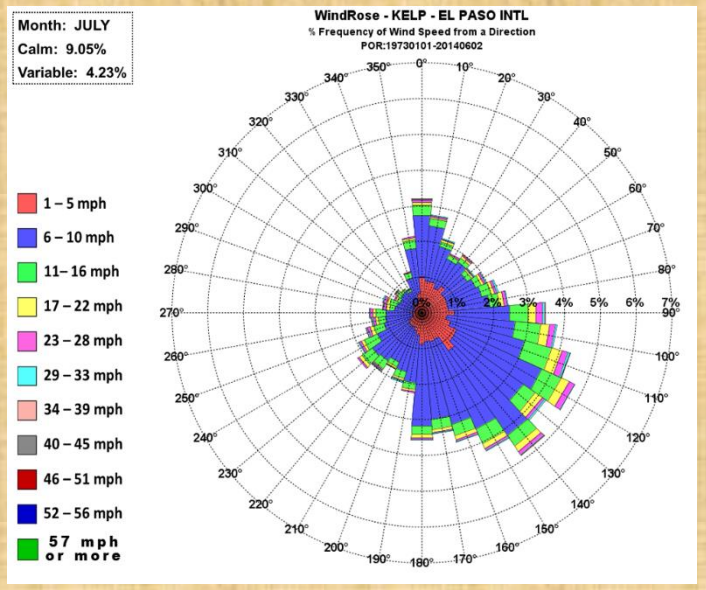
Date/Time	Location (County)	Event
AUG 14 700 AM	EL PASO 11NW-EL PASO	6.00 INCHES 48 HRS
AUG 14 800 AM	LA UNION 2SE-DONA ANA	5.88 INCHES 48 HRS
AUG 14 600 AM	SANTA TERESA 3W-DONA ANA	5.47 INCHES 48 HRS
AUG 14 700 AM	CANUTILLO 1W-EL PASO	5.18 INCHES 48 HRS
AUG 14 700 AM	EL PASO 3NE-EL PASO	4.73 INCHES 48 HRS
AUG 14 1135 AM	PINON 7S-OTERO	4.12 INCHES 48 HRS
AUG 14 1001 AM	MAYHILL-OTERO	3.33 INCHES 48 HRS
AUG 14 700 AM	LAS CRUCES 6SE-DONA ANA	3.24 INCHES 48 HRS
AUG 14 700 AM	CLOUDCROFT 2S-OTERO	3.14 INCHES 48 HRS
AUG 14 700 AM	SUNLAND PARK 7NW-DONA ANA	2.72 INCHES 48 HRS
AUG 14 800 AM	TULAROSA 1E-OTERO	2.64 INCHES 48 HRS
AUG 14 1131 AM	REDROCK 6N-GRANT	2.52 INCHES 48 HRS

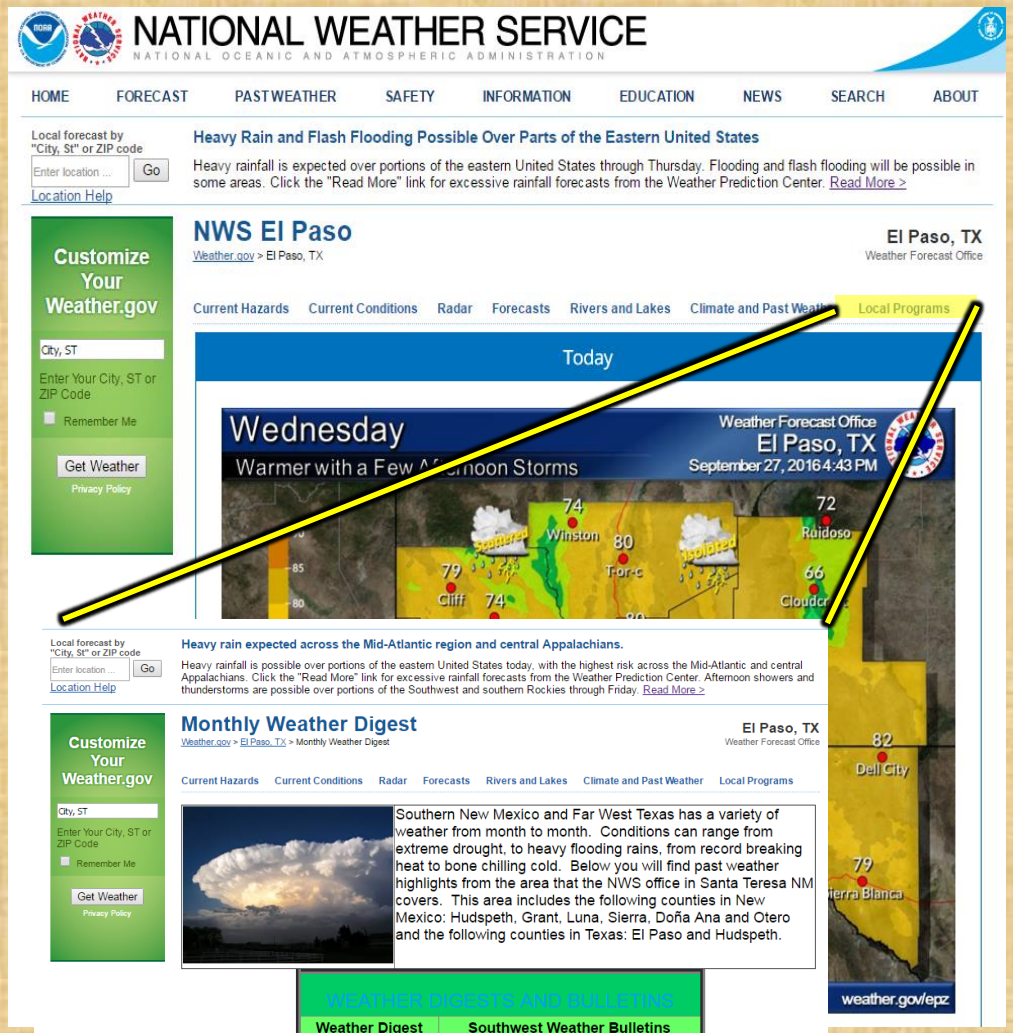
Selected Weather Reports August 2021

Date/Time	Location (County)	Event
AUG 14 700 AM	LAS CRUCES 6SW-DONA ANA	2.43 INCHES 48 HRS
AUG 14 700 AM	SILVER CITY 1W-GRANT	2.42 INCHES 48 HRS
AUG 14 1126 AM	DRIPPING SPRINGS-DONA ANA	2.33 INCHES 48 HRS
AUG 14 600 AM	ALLAMORE 4SW-HUDSPETH	2.32 INCHES 48 HRS
AUG 14 700 AM	HILLSBORO-SIERRA	1.93 INCHES 48 HRS
AUG 14 830 AM	ALAMOGORDO 3NE-OTERO	1.80 INCHES 48 HRS
AUG 14 730 AM	SUNSPOT-OTERO	1.43 INCHES 48 HRS
AUG 14 1151 AM	EL PASO INTL ARPT-EL PASO	1.38 INCHES 48 HRS
AUG 14 600 AM	STEINS 2NW-HIDALGO	1.37 INCHES 48 HRS
AUG 14 700 AM	DEMING 16SE-LUNA	1.19 INCHES 48 HRS
AUG 14 700 AM	KINGSTON-SIERRA	1.08 INCHES 48 HRS

Special Features

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





WEATHER DIGESTS AND BULLETINS

Weather Digest	Southwest Weather Bulletins
January	2005 Spring Fall
February	2006 Spring Fall
March	2007 Spring Fall
April	2008 Spring Fall
May	2009 Spring Fall
June	2010 Spring Fall
July	2011 Spring Fall
August	2012 Spring Fall
September	2013 Spring Fall
October	2014 Spring Fall
November	
December	

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.