

## Weekly Climate Summary: 6/30/2024-7/6/2024

### **I. Climate in the News:**

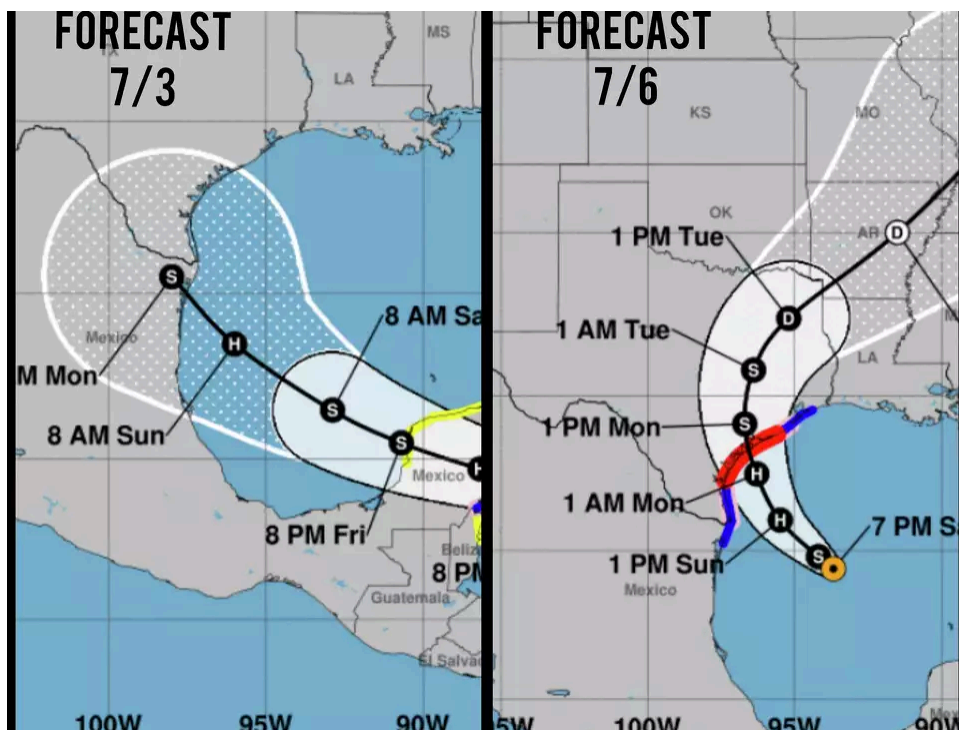
As folks celebrate the United State's 248th anniversary on the fourth of July, eyes were on the Gulf of Mexico as Hurricane Beryl meandered to the west after decimating Jamaica as well as some of the Caribbean islands. Initially forecast to traverse into Mexico, the storm posed little concern for the State of Texas, yet as the date of landfall got closer, the upper-level weather pattern began favoring a more curved path to the north and east. The impacts of Beryl are just beyond the scope of the coverage of this summary, so we will save details on this for the following week. Apart from the ever-changing forecast track of Beryl, decent thunderstorm coverage was seen across the state, relative to what is typical this time of the year, leading to decent precipitation coverage across Texas (for July standards).

Summertime thunderstorms are typically not severe, but do tend to harbor fairly strong winds due to the strong temperature contrast between the rain-cooled air and surrounding summertime heat. This being said, sometimes the wind can creep into severe thunderstorm criteria as was seen in some locations along the Texas Panhandle between July 2-4, 2024. The week of June 30-July 6 saw a total of 17 severe weather reports across Texas, decomposed into 1 tornado report, 3 hail reports, and 13 wind reports. The extremes in these reports are as follows:

Strongest Tornado- A landspout tornado in Collingsworth County caused no damage and therefore was not rated, however, it was the only tornado of the week, happening on the fourth of July.

Largest Hail- 1.50" in Armstrong County on July 6

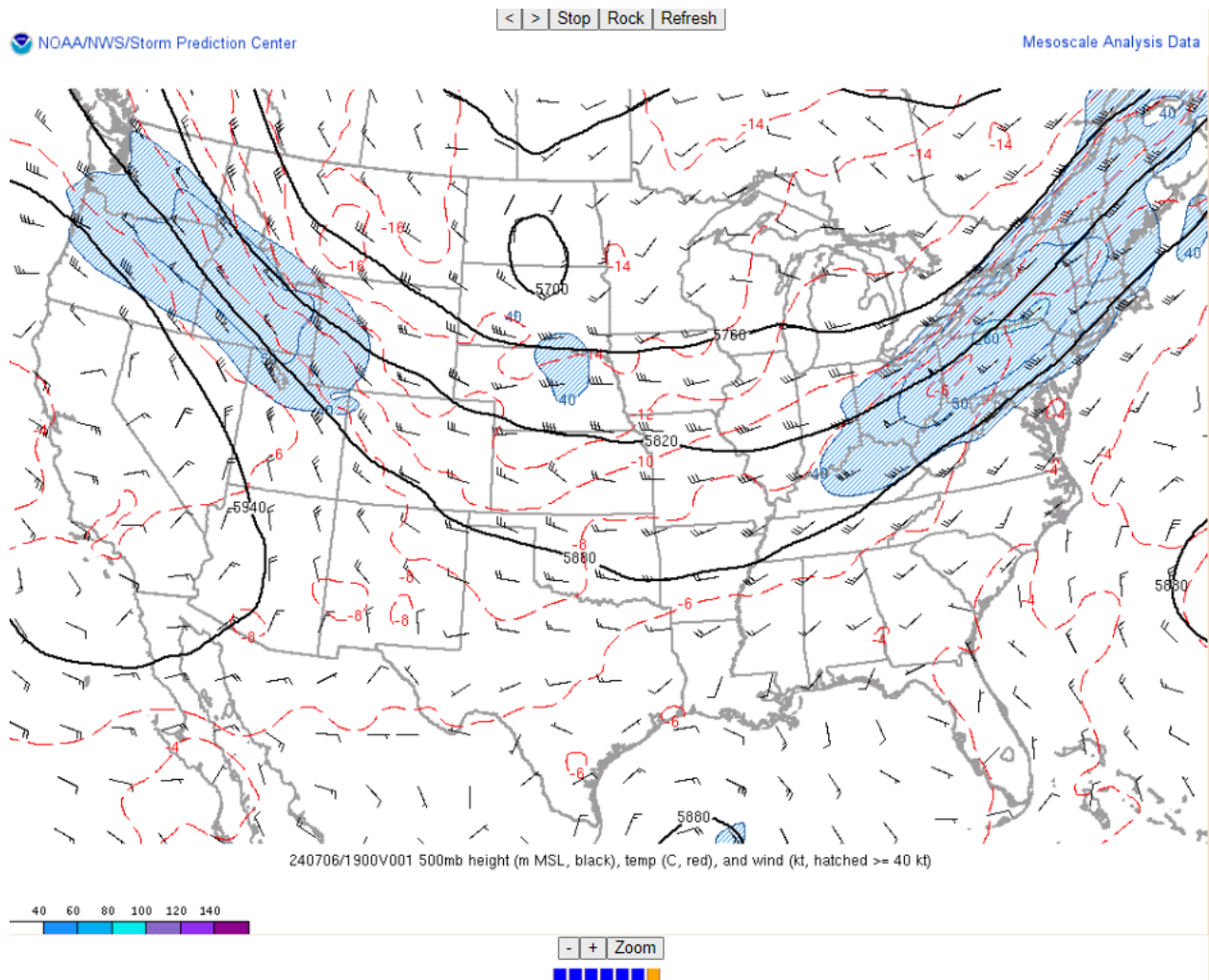
Strongest measured wind gust- **80 mph** in Hockley County on July 6



Map showing the National Hurricane Center's forecast track and cone of uncertainty of Hurricane Beryl. Upper level weather patterns are a big driver in where a tropical cyclone moves, and the movement and strength of upper level high and low pressure systems are what determine the path of these systems. Image courtesy of the National Hurricane Center and the Houston Chronicle.

## II. Weather Synopsis:

So the track of Hurricane Beryl shifted, but why? Typically, these systems are pulled around large scale upper level high pressure systems, and meander around the edges of these systems. One such high pressure system was expected to be set up over much of the south and southeast United States, repelling Beryl from curving northward. As we got closer to the eventual landfall of Hurricane Beryl, weather models hinted at a trough of low pressure developing in the mid-levels of the atmosphere, causing a weakening of the ridge of high pressure over the SE U.S., and shifting it further eastward. This allowed Beryl to essentially channel through a weakening of this area of high pressure and curve northward.



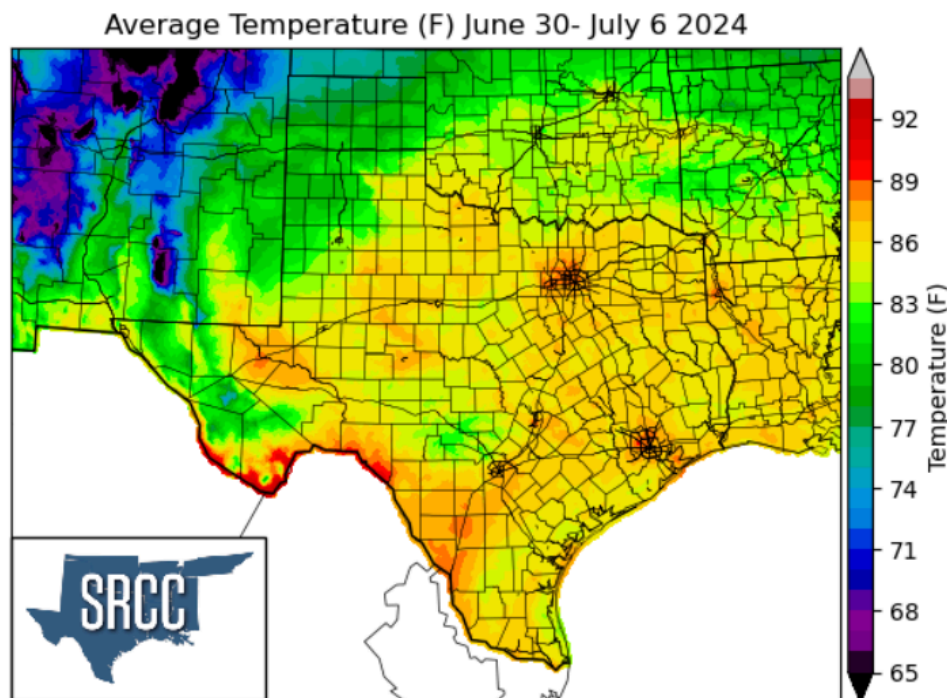
Weather map showing the height of pressure surfaces (dark solid lines) and winds (barbs) in the middle levels of the troposphere at 2:00 pm CST on July 5. The solid lines can be thought of as

contours connecting areas of equal pressure, and when these bulge northward, this is indicative of an upper level high pressure system, and when they bulge southward, this represents a large upper level low pressure system. The development of the trough of low pressure over the Great Plains helped shape the pattern in such a way that allowed Hurricane Beryl (coming into frame in the bottom center) to curve northward rather than continuing its westward trajectory. Image courtesy of the Storm Prediction Center Mesoanalysis archive.

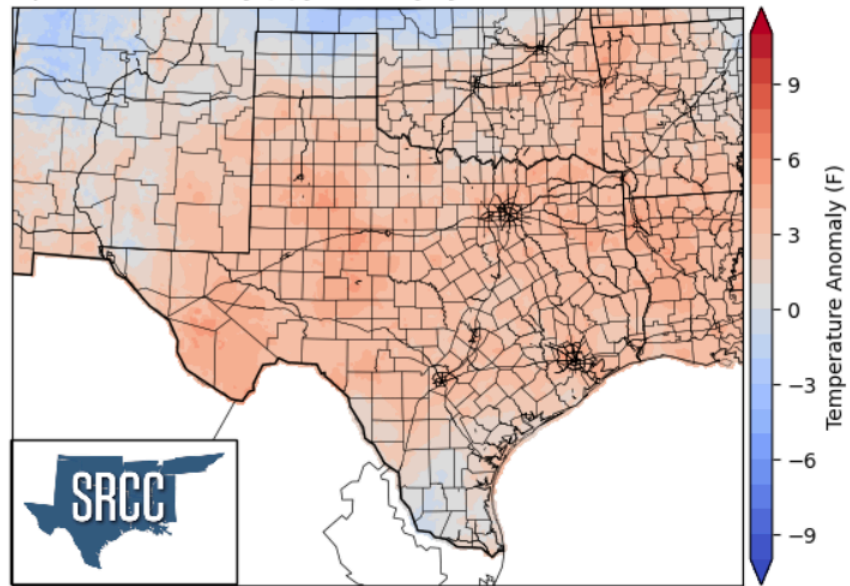
### **III. Temperature:**

The relatively high coverage of precipitation across the state (for summer standards) contributed to Texas seeing a much cooler week on average in comparison to last week. While last week temperature departures were well above normal for most places, this week average temperature departures, while still mainly above normal, were much more subdued in the positive direction. As was the case last week, the urban heat island effect can be picked out in the DFW and Houston metro areas. Overall, the extremes across the State of Texas are as follows:

- The Guadalupe Peak Texas RAWS station in Culberson County saw the lowest weekly average at 66.6°F
- The Rio Grande Village Co-op site in Brewster County saw the highest weekly average at **95.6°F**



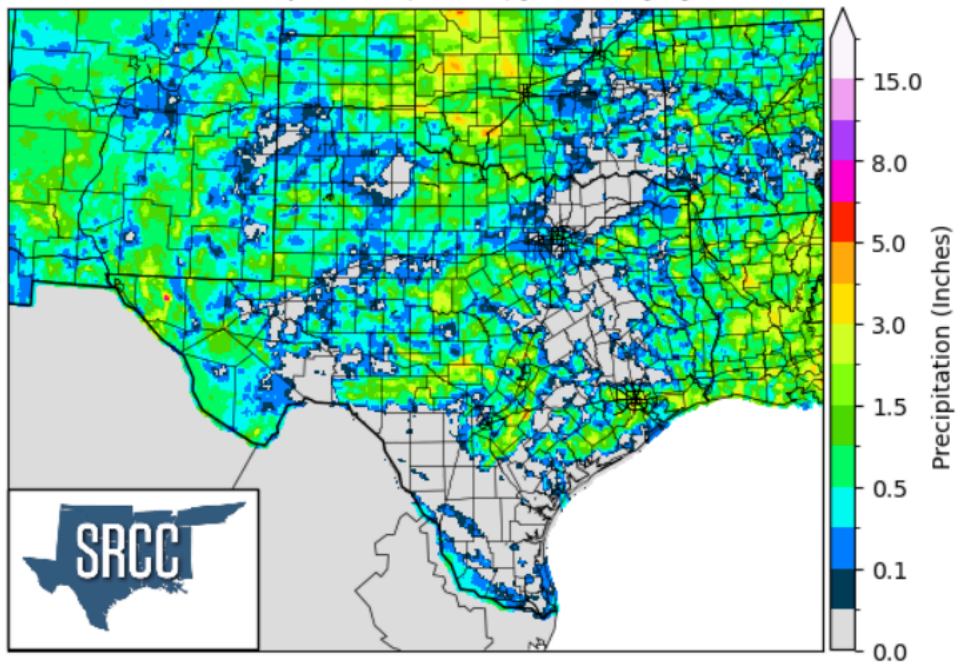
Mean Temperature Anomaly (F) June 30- July 6 2024 vs 1991-2020 Normals



#### **IV. Precipitation**

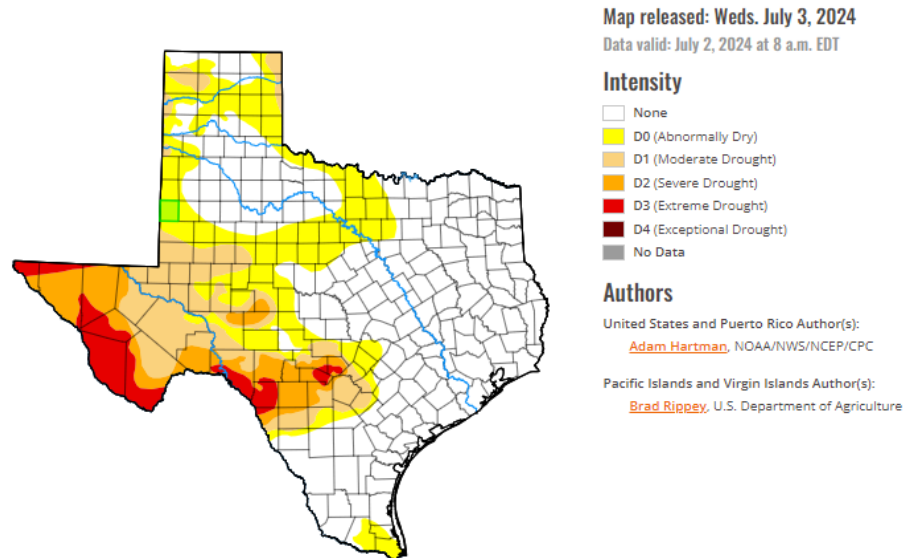
Precipitation across the State was much more widespread than the previous week. None of this precipitation was associated with Beryl, but instead was in part induced by small scale disturbances that came to life with thunderstorm development as daytime heating ensued.

Accumulated Precipitation (Inches) June 30- July 6 2024



We notice a worsening of drought conditions across mainly the Trans Pecos Region as more areas are now under extreme drought. A secondary area to note is the Big Country and the North Texas region where abnormally dry conditions have set up.

## Texas



### V. Statewide extremes

- The hottest recorded temperature of the week was **113°F** at the Rio Grande Village Co-op site in Brewster County on July 5, 2024
- The coldest recorded temperature of the week was 50°F at the Guadalupe Peak Texas RAWS station in Culberson County on July 5, 2024
- The most precipitation recorded in the week of June 30-July 5, 2024 was 4.09” at the Anahuac 5.7N CoCoRaHS site in Chambers County
- The rainiest day at any site across the State of Texas was July 6, 2024 where 3.73” of rain was reported at the Wills Point Co-op site in Van Zandt County