



NWS Houston, Texas September 2020 Regional Climate Summary



Produced by Jimmy Fowler

...Above Normal Precipitation due to Tropical Storm Beta...

The start of the month was dry and exceptionally warm. Three primary climate sites (Houston-Hobby, City of Houston, and City of Galveston) set new all-time record high minimum temperatures at the start of the month. Overall, there were 21 daily temperature records tied or broken in September with 3 daily rainfall records broken. These broken rainfall records will lead us into the biggest story of the month, Tropical Storm Beta, which caused all 3 of the daily rainfall records.

Tropical Storm Beta, the 22nd tropical system of the year, made landfall on the Matagorda Peninsula on the night of September 21st. Dangerous surf preceded Beta by a couple of days, then heavy rainfall and coastal flooding occurred on the 21st and 22nd of the month. The rainfall from Beta helped to wipeout the drought across Southeast Texas.

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By the Numbers: September 2020

| Location (records started) | Average Temp | Ranking | Total Rainfall | Ranking |
|--|-----------------|--------------------------|----------------|--------------------------|
| City of Houston, TX (1888) | 81.0°F | 32 nd Warmest | 8.53" | 14 th Wettest |
| Houston Hobby, TX (1930) | 82.3°F | 8 th Warmest | 13.07" | 3 rd Wettest |
| City of Galveston, TX (1871) | 83.2°F | 12 th Warmest | 4.01" | 63 rd Driest |
| City of College Station, TX (1882) | 78.0°F | 33 rd Coolest | 3.82" | 48 th Wettest |
| Conroe, TX (1997) | 79.1°F | 9 th Warmest | 3.67" | 10 th Wettest |
| Huntsville, TX (1997) | 78.5°F | 7 th Coolest | 3.42" | 10 th Wettest |
| Sugar Land, TX (2000) | 80.6°F | 10 th Warmest | 8.65" | 2 nd Wettest |
| Palacios, TX (1943) | 80.2°F | 38 th Warmest | 4.42" | 40 th Wettest |
| Clover Field (Pearland), TX (1997) | 82.0°F | 7 th Warmest | 10.55" | 2 nd Wettest |
| David Wayne Hooks (Tomball), TX (1998) | 79.4°F | 13 th Warmest | 7.53" | 4 th Wettest |
| Angleton, TX (1998) | 80.3°F | 8 th Warmest | 5.91" | 10 th Wettest |
| League City, TX (1990) | 81.2°F | 6 th Warmest | 9.89" | 9 th Wettest |



Precipitation

| Location | Total Precipitation (in.) | Departure from Normal (in.) | Number of Thunder Days | Maximum Daily Precipitation (in./date) | |
|-----------------------|---------------------------|-----------------------------|------------------------|--|------------------|
| Galveston (GLS) | 4.01 | -2.02 | 10 | 1.88 | 22 nd |
| Houston Hobby (HOU) | 13.07 | +7.89 | 7 | 7.32 | 22 nd |
| City of Houston (IAH) | 8.53 | +4.41 | 9 | 3.58 | 22 nd |
| College Station (CLL) | 3.82 | +0.64 | 6 | 1.22 | 22 nd |

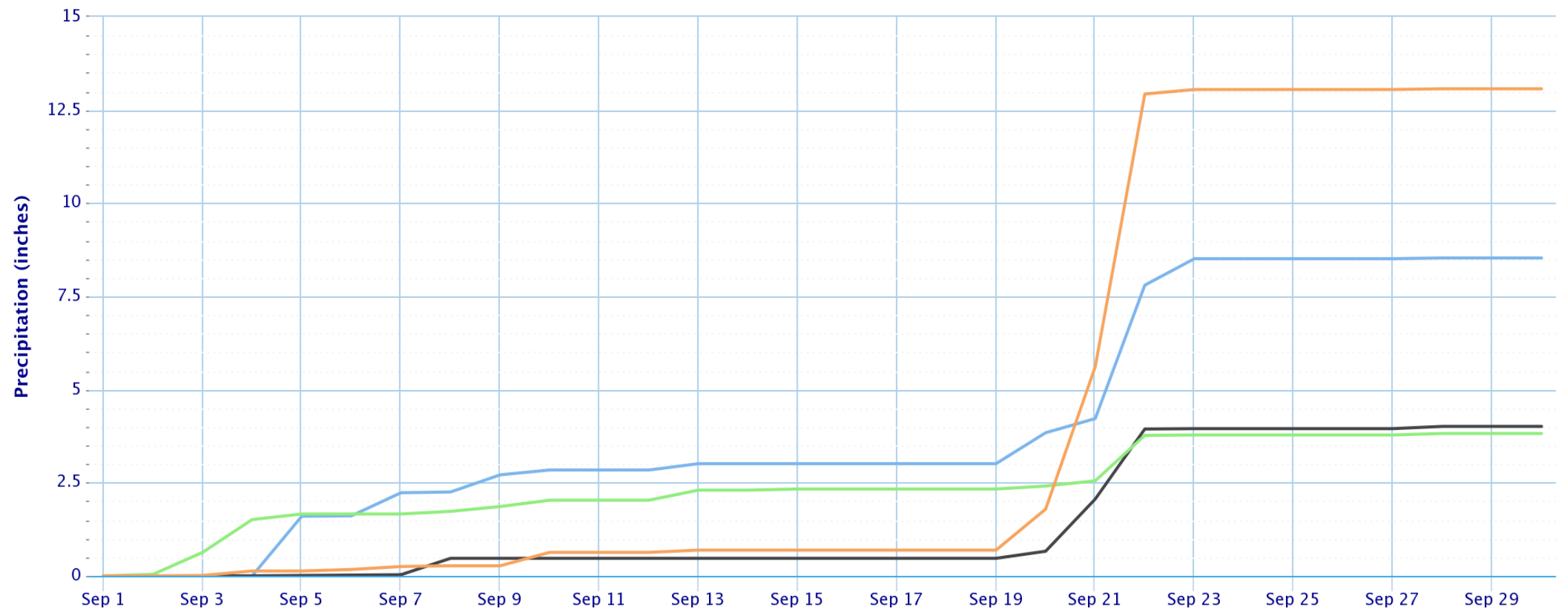
September brought some much needed rain to Southeast Texas with most of the region seeing above average rainfall. This past September was the third wettest September that Houston-Hobby has ever recorded. The wettest day of the month occurred on the 22nd – which is when the bulk of the rain associated with Tropical Storm Beta moved through the region.



Precipitation Accumulation Graph

Accumulated Precipitation

Green/black diamonds represent subsequent/missing values



City of Houston

City of Galveston

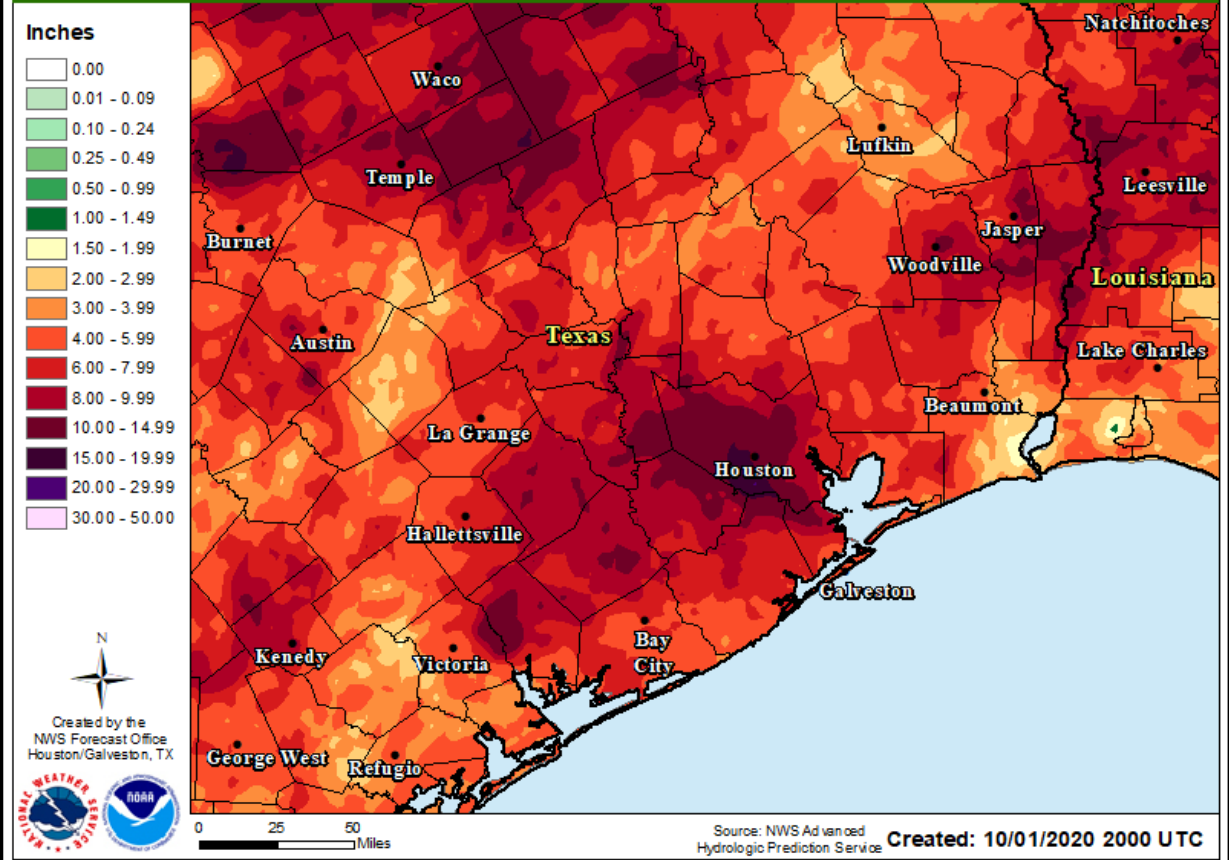
City of College Station

Houston-Hobby

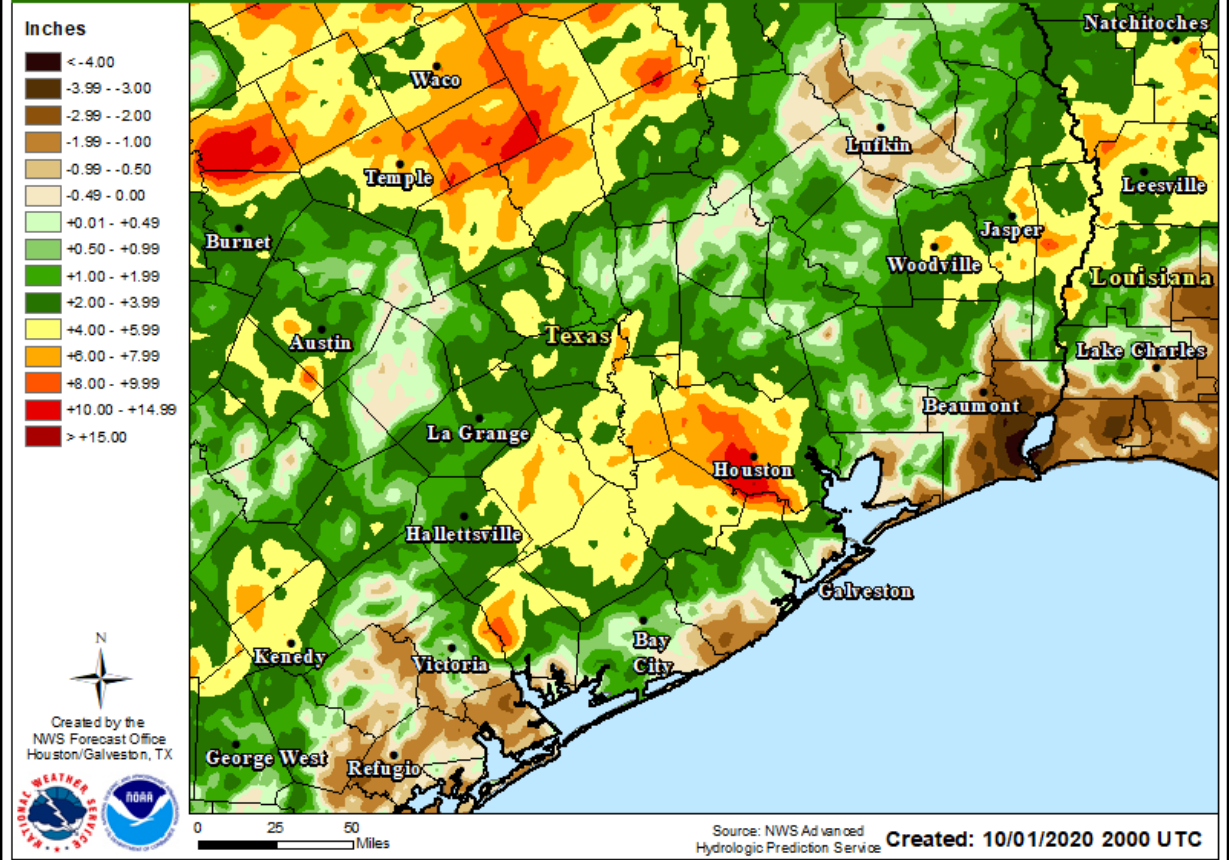


Precipitation Maps

Total Monthly Precipitation - September 2020



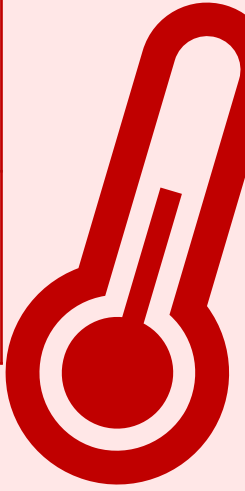
Total Monthly Precipitation Departure From Normal - September 2020



Temperature

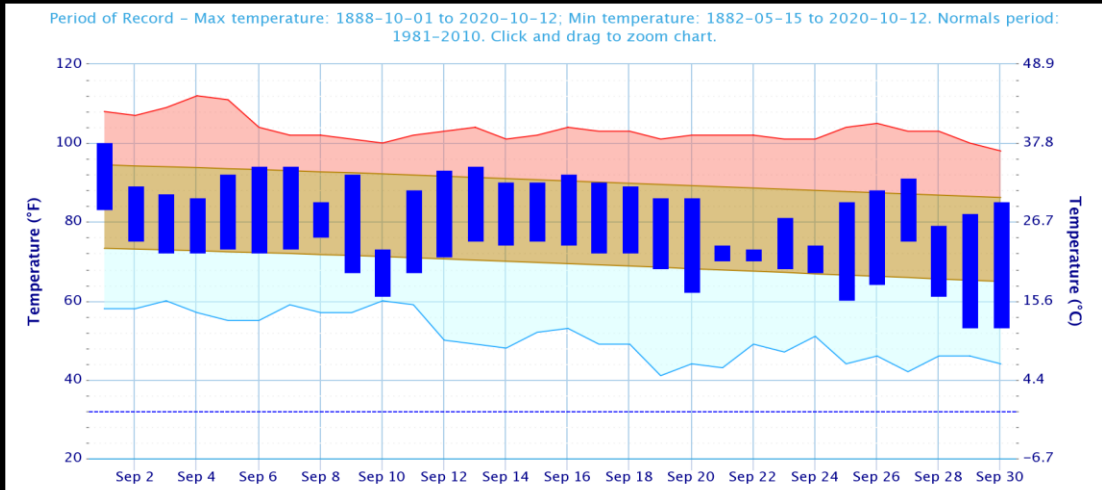
| Location | Average High Temp (F) | Average Low Temp (F) | Average Temp (F) | Normal Average Temp (F) | Departure From Normal Average (F) | Maximum Temperature (F) | Minimum Temperature (F) |
|-----------------------|-----------------------|----------------------|------------------|-------------------------|-----------------------------------|---|---|
| Galveston (GLS) | 88.4 | 78.0 | 83.2 | 81.6 | +1.6 | 96 on the 16 th | 63 on the 30 th |
| Houston Hobby (HOU) | 90.0 | 74.7 | 82.3 | 80.1 | +2.2 | 99 on the 2 nd | 58 on the 29 th |
| City of Houston (IAH) | 89.8 | 72.2 | 81.0 | 79.8 | +1.2 | 99 on the 1 st & 2 nd | 54 on the 30 th |
| College Station (CLL) | 86.7 | 69.2 | 77.9 | 80.0 | -2.1 | 100 on the 1 st | 53 on the 29 th & 30 th |

Overall, September continued the stretch of above normal temperatures (especially for the first half of the month), but average temperatures were closer to normal than previous months. In fact, College Station had an average temperature below normal, which is the first month since November of 2019 which averaged below normal temperatures. Part of the reason temperatures were closer to normal this month was due of the above normal precipitation and increased cloud coverage across the area.

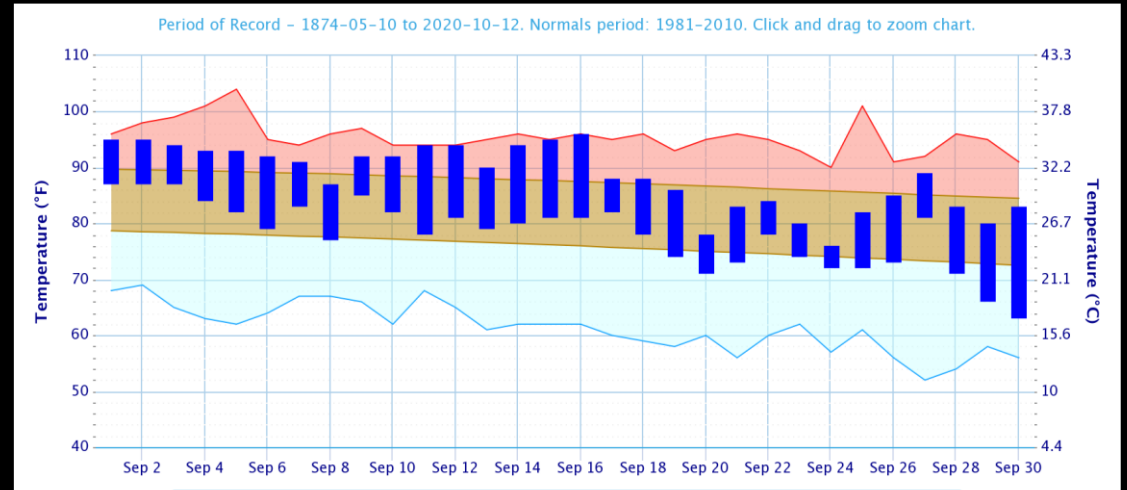


Temperature Charts

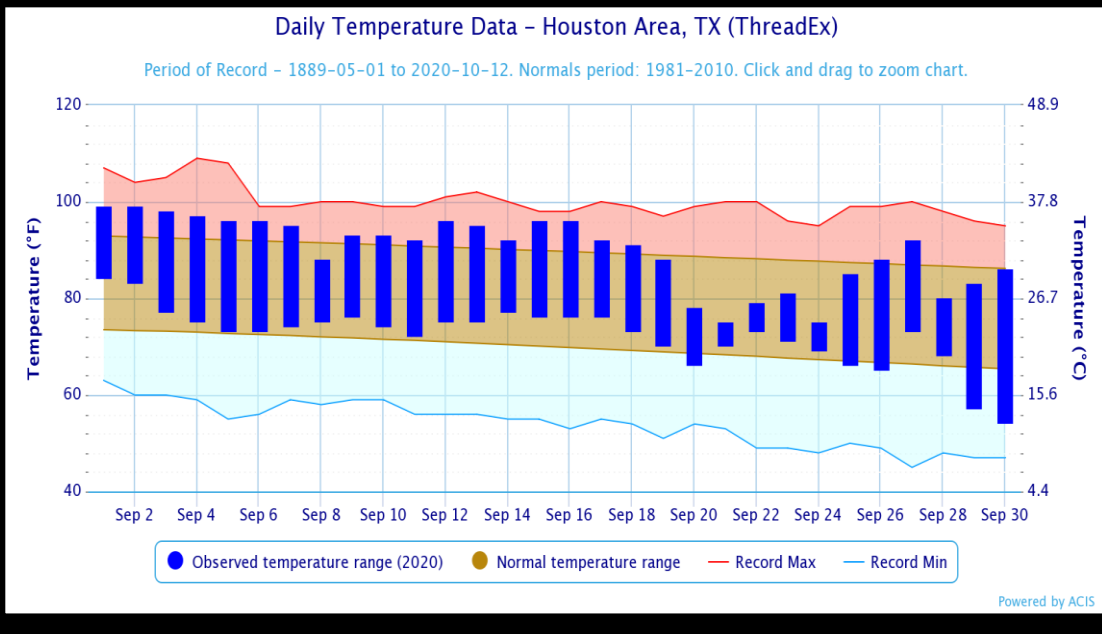
City of College Station



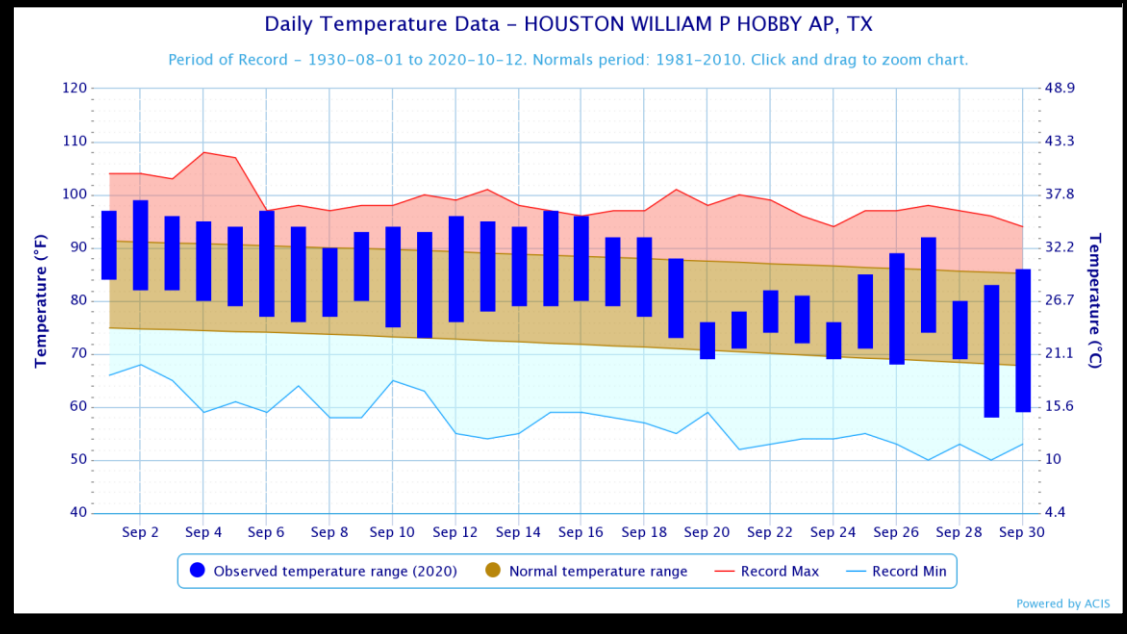
City of Galveston



City of Houston



Houston-Hobby



Daily Record Reports

| Site | Date | Record Type | New Record | Previous Record |
|-----------------|----------------------------|----------------------|------------|-----------------|
| City of Houston | September 1 st | High Min Temperature | 84° | 80° in 1962 |
| City of Houston | September 2 nd | High Min Temperature | 83° | 79° in 1964 |
| City of Houston | September 22 nd | Daily Max Rainfall | 3.58" | 3.14° in 1965 |
| Houston-Hobby | September 1 st | High Min Temperature | 84° | 80° in 2011 |
| Houston-Hobby | September 2 nd | High Min Temperature | 82° | 79° in 2019 |
| Houston-Hobby | September 3 rd | High Min Temperature | 82° | 81° in 2014 |
| Houston-Hobby | September 6 th | High Max Temperature | 97° - T | 97° in 2019 |
| Houston-Hobby | September 9 th | High Min Temperature | 80° | 79° in 1961 |
| Houston-Hobby | September 15 th | High Max Temperature | 97° | 96° in 1995 |
| Houston-Hobby | September 16 th | High Max Temperature | 96° - T | 96° in 2004 |

All-time record high min

All-time record high min

There were 24 daily records set during the month of September.



Key

High Max

Low Max

Precip

High Min

Low Min

Daily Record Reports

| Site | Date | Record Type | New Record | Previous Record |
|-------------------|----------------------------|----------------------|------------|-----------------|
| Houston-Hobby | September 16 th | High Min Temperature | 80° | 79° in 2016 |
| Houston-Hobby | September 18 th | High Min Temperature | 77° - T | 77° in 2016 |
| Houston-Hobby | September 21 st | Daily Max Rainfall | 3.82" | 3.28° in 1940 |
| Houston-Hobby | September 22 nd | Daily Max Rainfall | 7.32" | 3.86° in 1997 |
| City of Galveston | September 1 st | High Min Temperature | 87° | 84° in 2012 |
| City of Galveston | September 2 nd | High Min Temperature | 87° | 84° in 2012 |
| City of Galveston | September 3 rd | High Min Temperature | 87° | 84° in 1985 |
| City of Galveston | September 7 th | High Min Temperature | 83° - T | 83° in 2016 |
| City of Galveston | September 9 th | High Min Temperature | 85° | 84° in 1989 |
| City of Galveston | September 11 th | High Max Temperature | 94° - T | 94° in 1937 |

All-time record high min
during the month of September.



Key

High Max
Low Max
Precip
High Min
Low Min

Daily Record Reports

| Site | Date | Record Type | New Record | Previous Record |
|-------------------------|----------------------------|----------------------|------------|-----------------|
| City of Galveston | September 12 th | High Max Temperature | 94° - T | 94° in 1912 |
| City of Galveston | September 15 th | High Max Temperature | 95° | 94° in 2019 |
| City of Galveston | September 16 th | High Max Temperature | 96° - T | 96° in 2004 |
| City of College Station | September 10 th | Low Max Temperature | 73° | 77° in 1948 |

There were 24 daily records set during the month of September.



High Max

Low Max

Precip

High Min

Low Min

Key

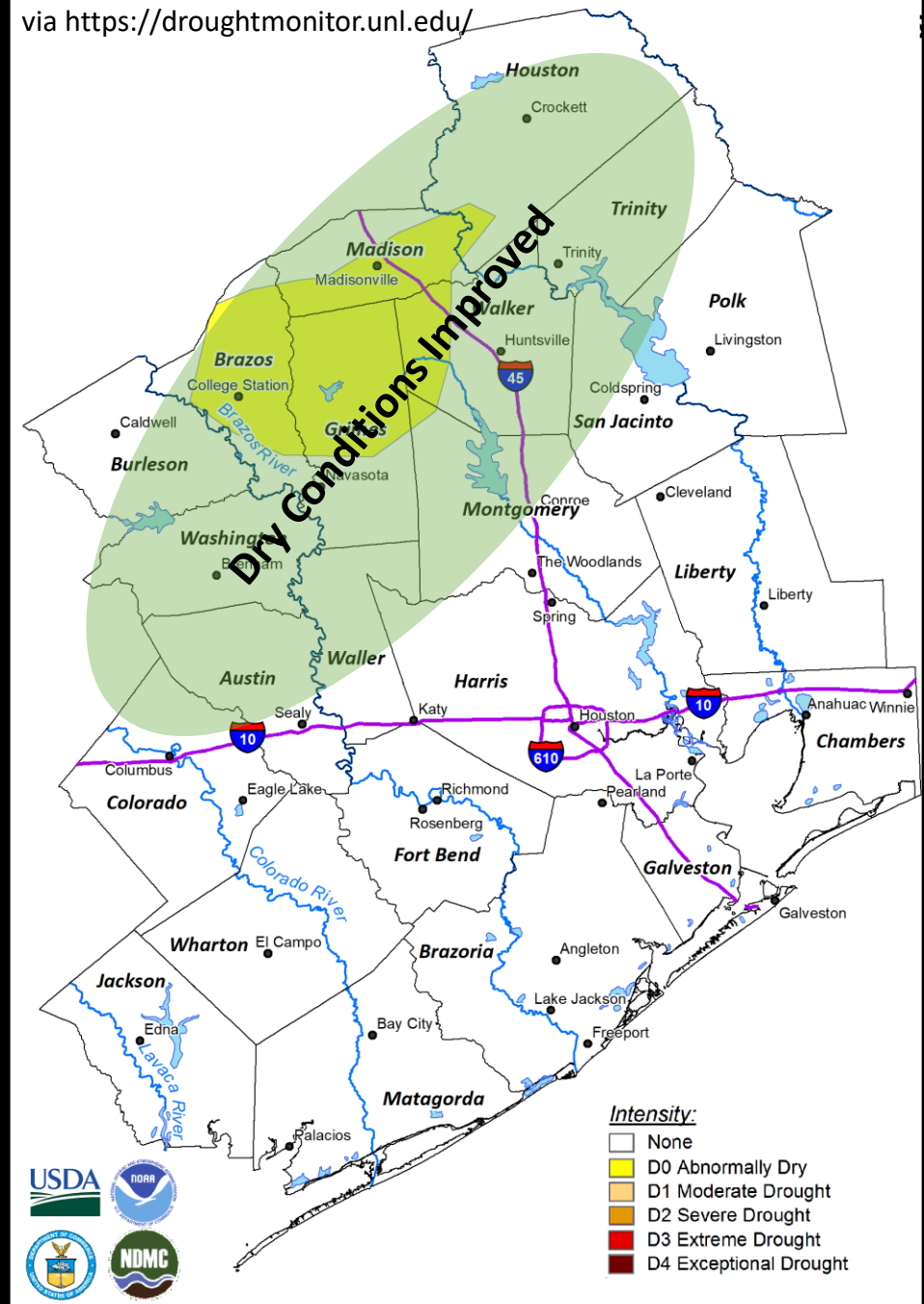


Drought Monitor

As of October 6th

Heavy rainfall from Tropical Storm Beta helped alleviate drought conditions across the area. As of October 6th, only a small area of abnormal dry conditions remain across portions of Brazos, Grimes, Walker and Madison counties.

via <https://droughtmonitor.unl.edu/>

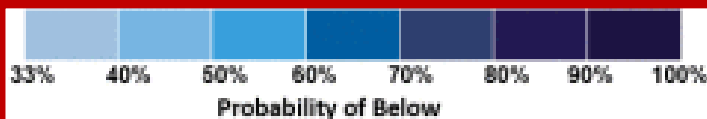
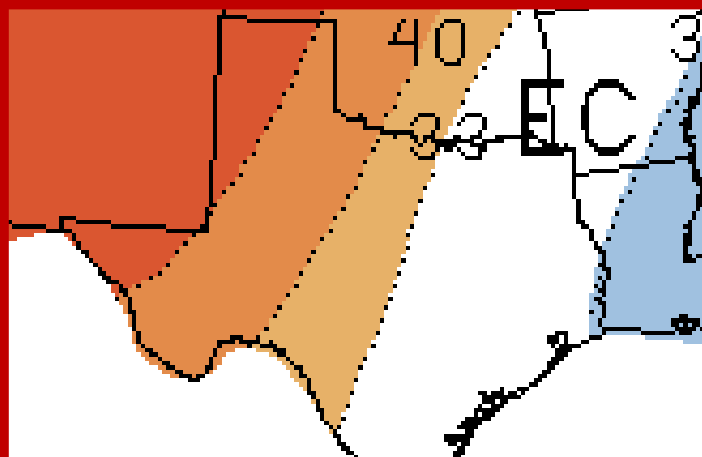


October Climatology & Outlook

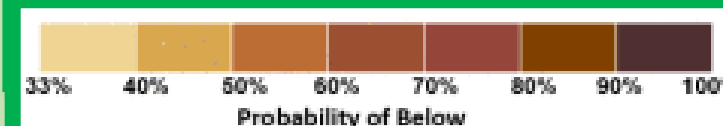
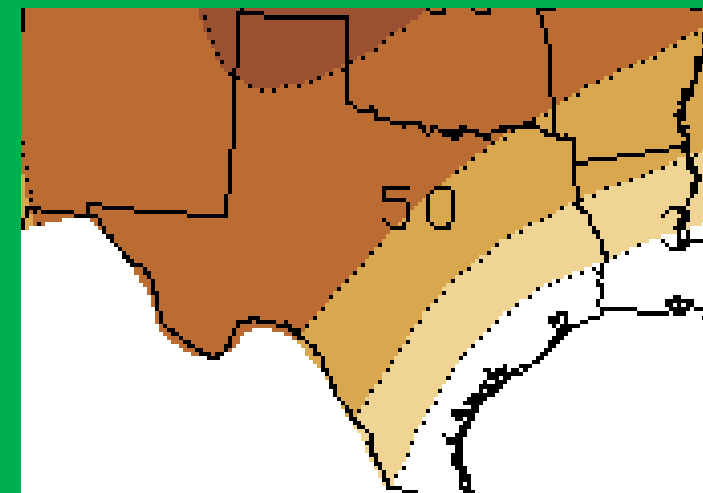
| Location | Average Temp(°F) | Normal High (°F) | Normal Low (°F) |
|-----------------|------------------|------------------|-----------------|
| Galveston | 74.3 | 80.6 | 68.1 |
| Houston Hobby | 72.1 | 81.2 | 63.7 |
| City of Houston | 71.5 | 82.0 | 60.9 |
| College Station | 70.8 | 81.4 | 60.3 |

| Location | Normal Monthly Precipitation (in.) |
|-----------------|------------------------------------|
| Galveston | 5.52 |
| Houston Hobby | 5.99 |
| City of Houston | 5.70 |
| College Station | 4.92 |

Temperature Outlook



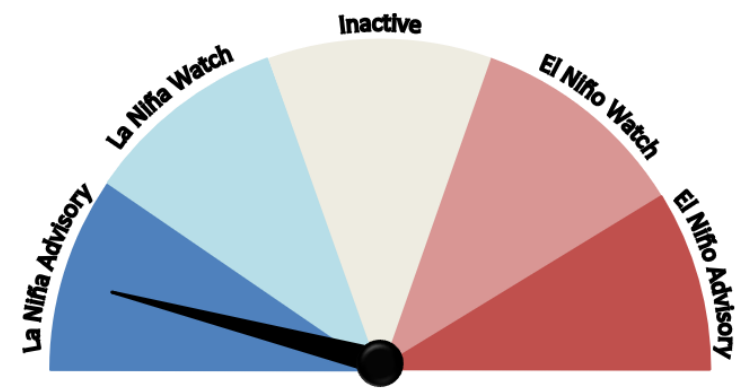
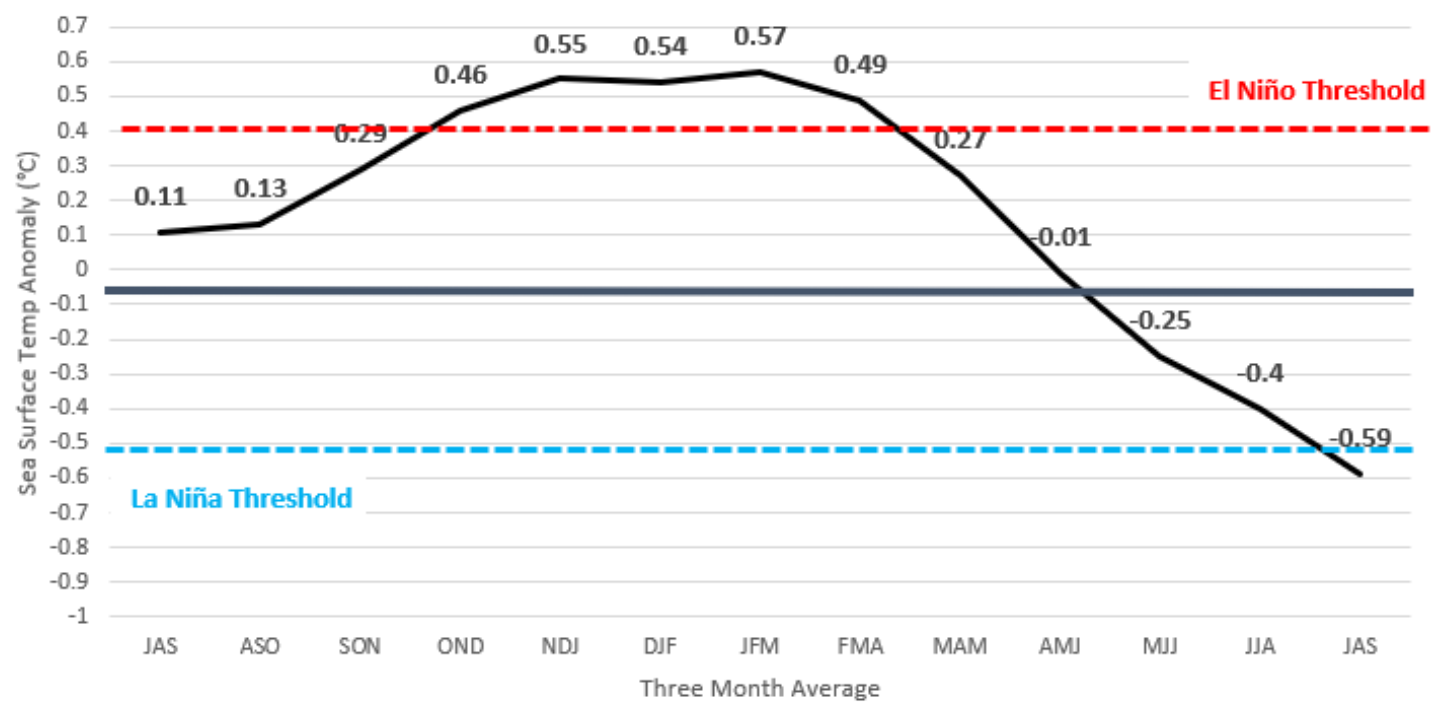
Precipitation Outlook



The Climate Prediction Center's ENSO Forecast: La Niña Advisory

- La Niña conditions are present
- 85% chance of La Niña conditions continuing through the winter

Sea Surface Temperature Anomalies (°C) in the Tropical Pacific



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

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

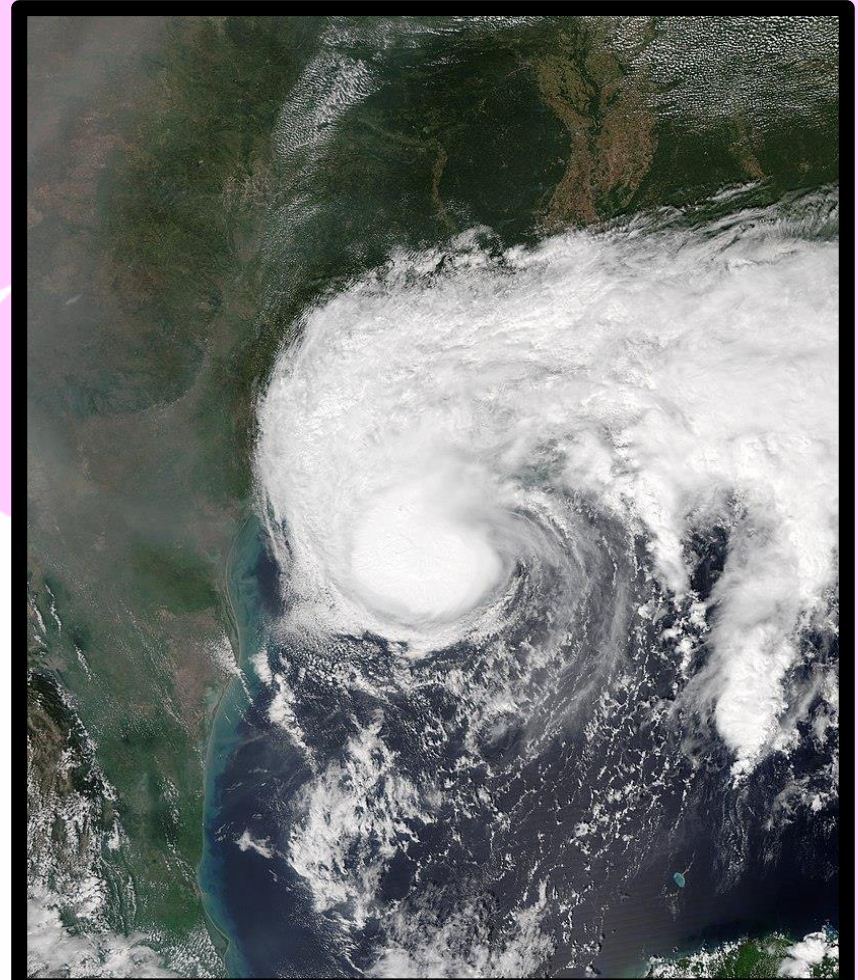


Tropical Storm Beta

| Formed | Dissipated | Min Pressure | Max Sustained Wind |
|-----------------------|-----------------------|--------------|--------------------|
| Sept 17 th | Sept 25 th | 994 mb | 60 mph |

Tropical Storm Beta formed as a depression in the southwestern Gulf of Mexico on September 16th becoming the 22nd tropical system of the year in the Atlantic Basin. It strengthened into a Tropical Storm a day later and very slowly moved northward through the following few days. On September 20th, Beta stalled then took a turn to the west and eventually made landfall on September 21st on the southern tip of the Matagorda Peninsula.

While Beta did not have strong winds associated with it, the slow nature of it allowed for dangerous marine conditions to begin days before landfall. Coastal flooding, high waves, and rip currents all occurred before and during Beta. Heavy rainfall associated with Beta occurred in Galveston, Fort Bend, and Harris counties. The heavy rainfall led to multiple road closures due to street flooding as well as flooding of creeks and bayous. There was one fatality during the storm along Brays Bayou.



Tropical Storm Beta on September 20th, 2020 as it stalled in the western Gulf

Climate Primary Site History

Galveston (GLS)

Records for Galveston are from observations at the following locations: 67-69 Strand (April 1, 1871 - Aug 31, 1874); 23rd and the Strand (Sep 1, 1874 - July 29, 1878), 1.75 miles WSW of the previous location; the Custom House at Bath Street and the Strand (July 30, 1878 - May 8, 1882); Colorado and Santa Fe Railroad Building at 25th and the Strand (May 9, 1882 - March 14, 1883); back to the Custom House which later became the Cotton Exchange Building (March 15, 1883 - June 24, 1898), about a 1/3 of a mile E of the previous Custom House location; The Levy Building at 2223 Market Street (June 25, 1898 - Nov 26, 1900); the Trust Building at Tremont and Post Office Streets (Nov 27, 1900 - June 24, 1946), one-quarter mile south of the Levy Building; the U.S. Post Office Building at 601 Rosenberg (June 25, 1946 - 1994); Scholes Field (January 1995 to present).

College Station (CLL)

Records from 1893 through July 1951 are based on observations taken at the Texas Agriculture Experiment COOP Station main farm located 6 miles southwest of College Station. Records from August 1951 through the present are based on observations taken at Easterwood Field. Normal temperatures are calculated from 1981 to 2000 period.

City of Houston (IAH)

Records for the City of Houston are from observations at the following locations: Cotton Station from July 1881 through September 1909, Stewart Building at Preston and Fannin from September 1909 through February 1926, Shell Building at Texas and Fannin from March 1926 through August 1938, Federal Building at Franklin and Fannin from August 1938 through May 1969, Intercontinental Airport from June 1969 to the present .

Houston Hobby (HOU)

Records are based upon observations beginning in August 1931.

