



NWS Houston, Texas June 2019 Regional Climate Summary

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. . . Another Hot and Wet June in SE TX. . .

Hot temperatures and above normal rainy conditions helped to set a total of seventeen daily records across the primary climate sites through out the month of June, including a rare hail event at Intercontinental Airport. Above normal monthly rainfall totals kept drought to a minimum area wide. El Niño conditions also continued throughout the month of June.



Table of Contents

Page Number	Page Title
1	Cover
2	Table of Contents
3	June by the Numbers
4	Precipitation
5	Total Monthly Precipitation – June
6	Total Monthly Precipitation Departure From Normal – June
7	Temperatures
8-9	Monthly Temperature Charts
10	Drought Conditions
11-12	June Record Reports
13	July Outlook
14	ENSO
15	ENSO Observations
16	ENSO Forecast
17	Climate Primary Site History



June 2019 by the Numbers

Location (records started)	Average Temp	Ranking	Total Rainfall	Ranking
City of Houston, TX (1888)	82.7°F	22 nd Warmest	6.88"	31 st Wettest
Houston Hobby, TX (1930)	83.3°F	10 th Warmest	7.13"	21 st Wettest
City of Galveston, TX (1871)	83.1°F	16 th Warmest	7.46"	24 th Wettest
City of College Station, TX (1882)	81.6°F	28 th Warmest	4.95"	32 nd Wettest
Conroe, TX (1997)	81.1°F	8 th Warmest	6.35"	5 th Wettest
David Wayne Hooks (Tomball), TX (1998)	81.1°F	15 th Warmest	10.02"	3 rd Wettest
Angleton, TX (1998)	81.7°F	9 th Warmest	9.26"	2 nd Wettest
Clover Field (Pearland), TX (1997)	82.7°F	11 th Warmest	8.58"	2 nd Wettest
Palacios, TX (1943)	84.8°F	4 th Warmest	12.08"	4 th Wettest
Sugar Land, TX (2000)	81.9°F	13 th Warmest	6.34"	3 rd Wettest
Huntsville, TX (1997)	81.7°F	11 th Warmest	7.21"	4 th Wettest
League City, TX (1990)	82.6°F	6 th Warmest	12.34"	3 rd Wettest



Precipitation

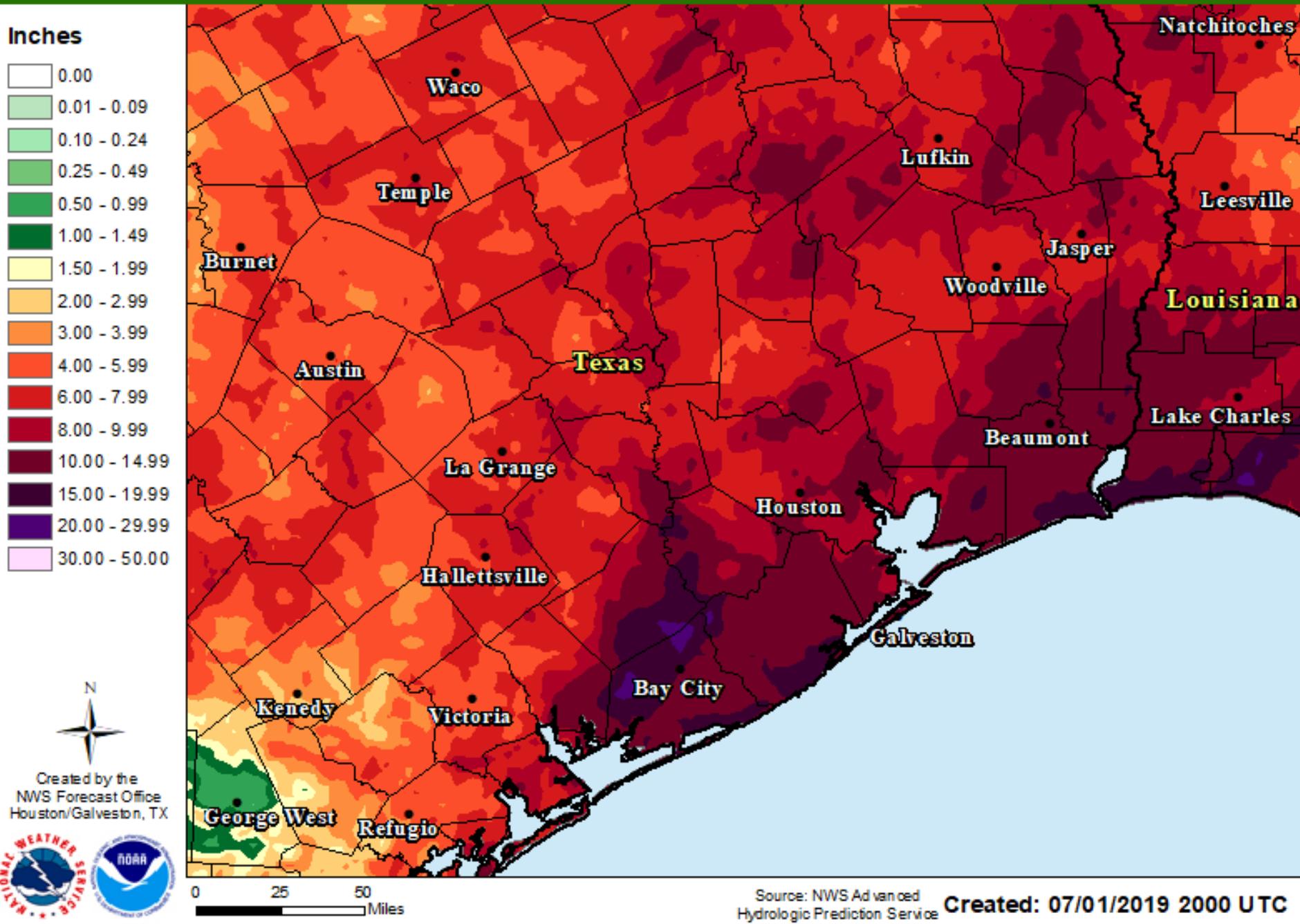
The month of June ended with slightly above normal monthly totals, keeping drought conditions away across southeast Texas. A typical summertime regime settled in, with most of the daily convection derived at a small scale level, developing along features such as the sea or bay breezes and residual outflow boundaries. A few synoptic level (large-scale) features consisted of multiple upper-level disturbances which also helped to provide lift leading to widespread precipitation. A significant disturbance pushed through during the first week of the month, bringing ample rainfall of 2 to 9 inches along the coast and over the southwestern counties. This event specifically did help to place most of our secondary climate sites in the top five in terms of wettest Junes on record, and can be referenced on the previous page.

Site	Total Precipitation (in.)	Departure from Normal (in.)	Number of Thunder Days	Maximum Daily Precipitation (in./date)
Galveston (GLS)	7.46	1.77	8	2.77 June 25th
Houston Hobby (HOU)	7.13	0.03	13	2.68 June 5th
City of Houston (IAH)	6.88	0.95	11	2.45 June 5th
College Station (CLL)	4.95	0.50	9	1.85 June 5th



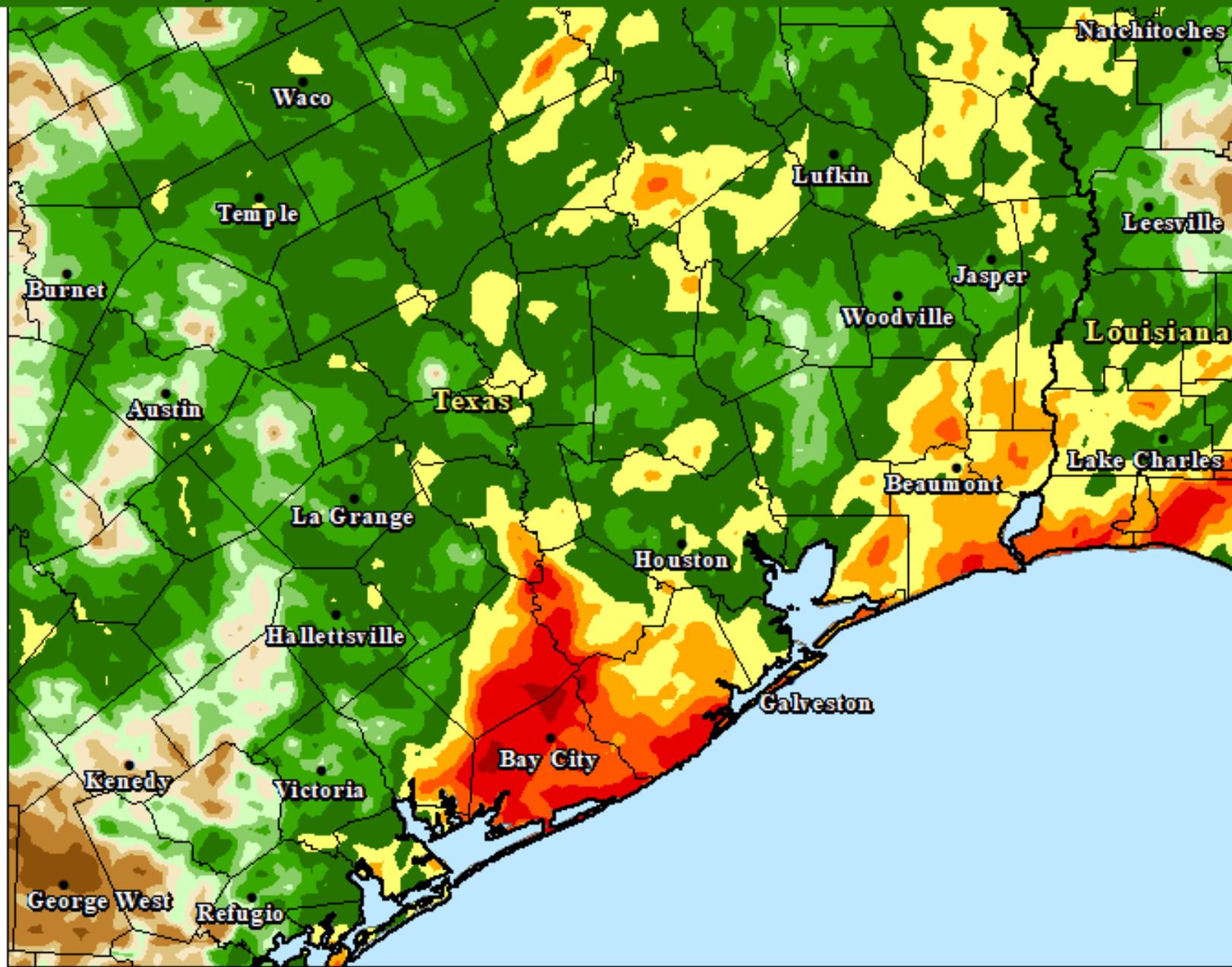
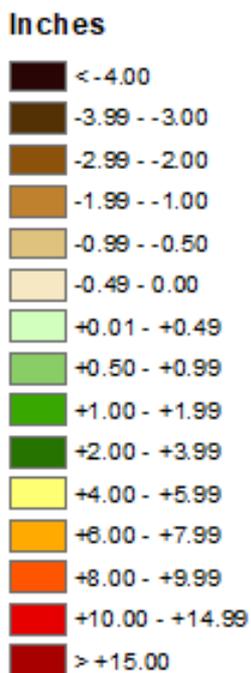
Precipitation (Continued)

Total Monthly Precipitation - June 2019



Precipitation (Continued)

Total Monthly Precipitation Departure From Normal - June 2019



Created by the
NWS Forecast Office
Houston/Galveston, TX



Source: NWS Advanced Hydrologic Prediction Service
Created: 07/01/2019 2000 UTC



Temperatures

Daily average temperatures were only slightly above normal nearly every day throughout the month of June. Days that brought precipitation and thicker cloud cover kept cooler of course than those when high pressure was situated overhead. Taking a look at the overall rankings, nothing of significance temperatures wise occurred across the climate sites for the month of June.

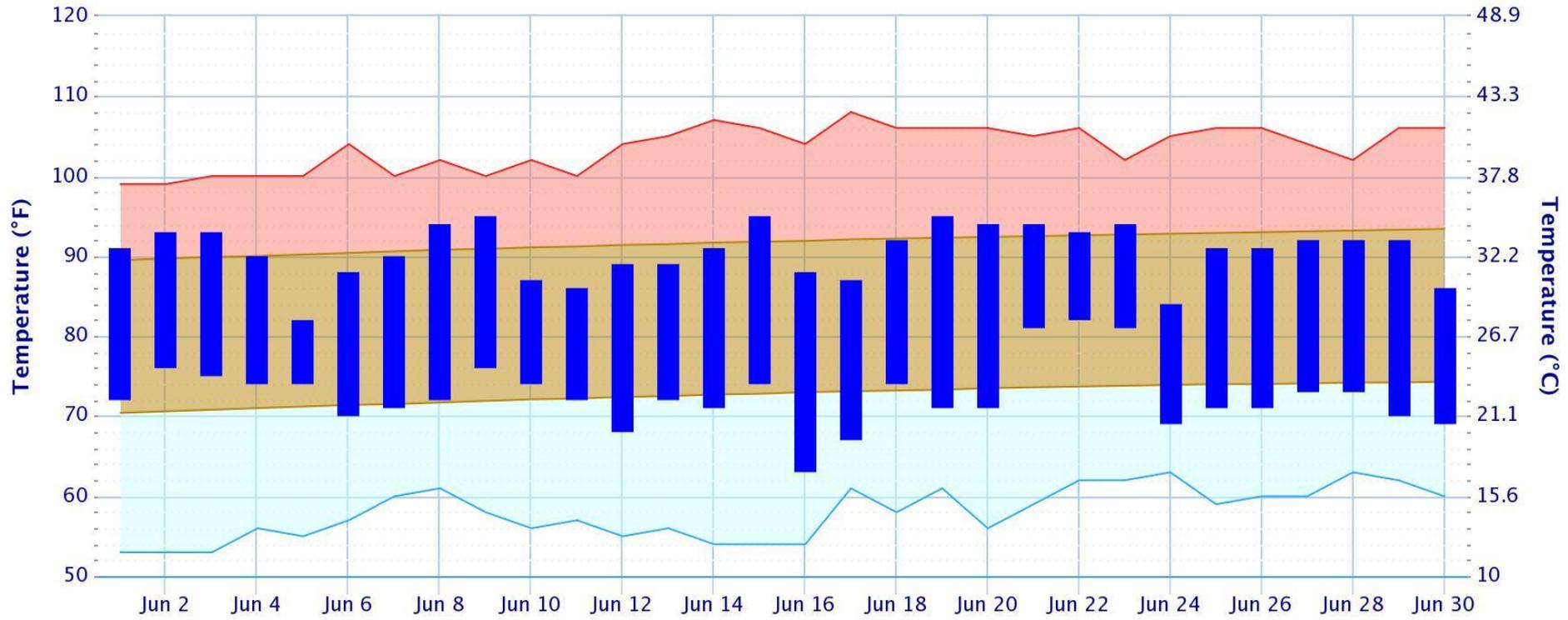
Site	Average Temp (F)	Average High Temp (F)	Average Low Temp (F)	Normal Average Temp (F)	Departure From Normal (F)	Maximum Temperature (F)	Minimum Temperature (F)
Galveston (GLS)	83.1	88.7	77.5	82.9	+0.2	93 on June 7th and 8th	66 on June 16th
Houston Hobby (HOU)	83.3	91.3	75.3	82.0	+1.3	97 on June 9th	68 on June 16th
City of Houston (IAH)	82.7	91.8	73.5	82.4	+0.3	97 on June 9th	67 on June 16th
College Station (CLL)	81.6	90.6	72.6	81.0	-0.6	95 on June 15th and 19th	63 on June 16th



Monthly Temperature Charts

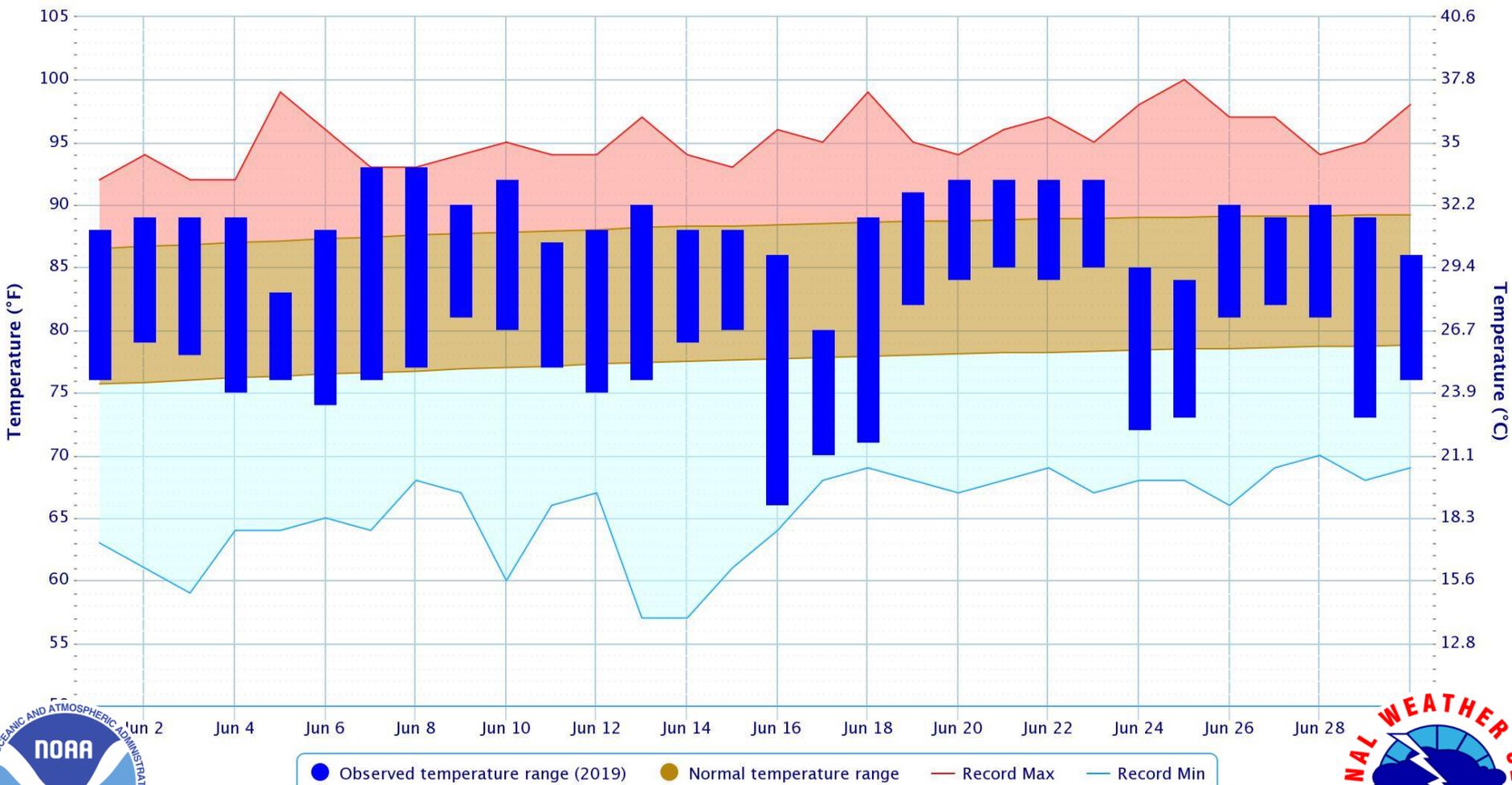
Daily Temperature Data – College Station Area, TX (ThreadEx)

Period of Record – Max temperature: 1888-10-01 to 2019-07-04; Min temperature: 1882-05-15 to 2019-07-04. Normals period: 1981-2010. Click and drag to zoom chart.



Daily Temperature Data – Galveston Area, TX (ThreadEx)

Period of Record – 1874-05-10 to 2019-07-04. Normals period: 1981-2010. Click and drag to zoom chart.



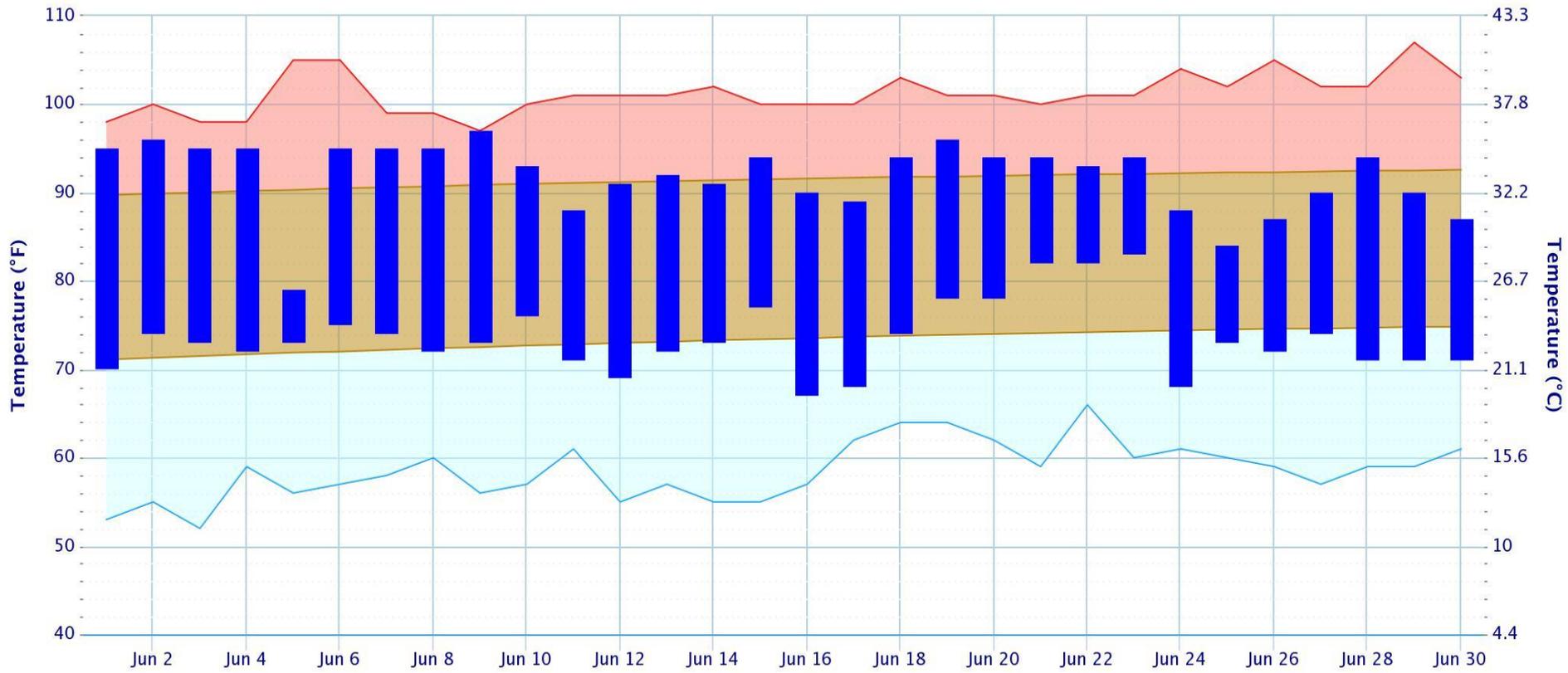
● Observed temperature range (2019)
 ● Normal temperature range
 — Record Max
 — Record Min



Monthly Temperature Charts (continued)

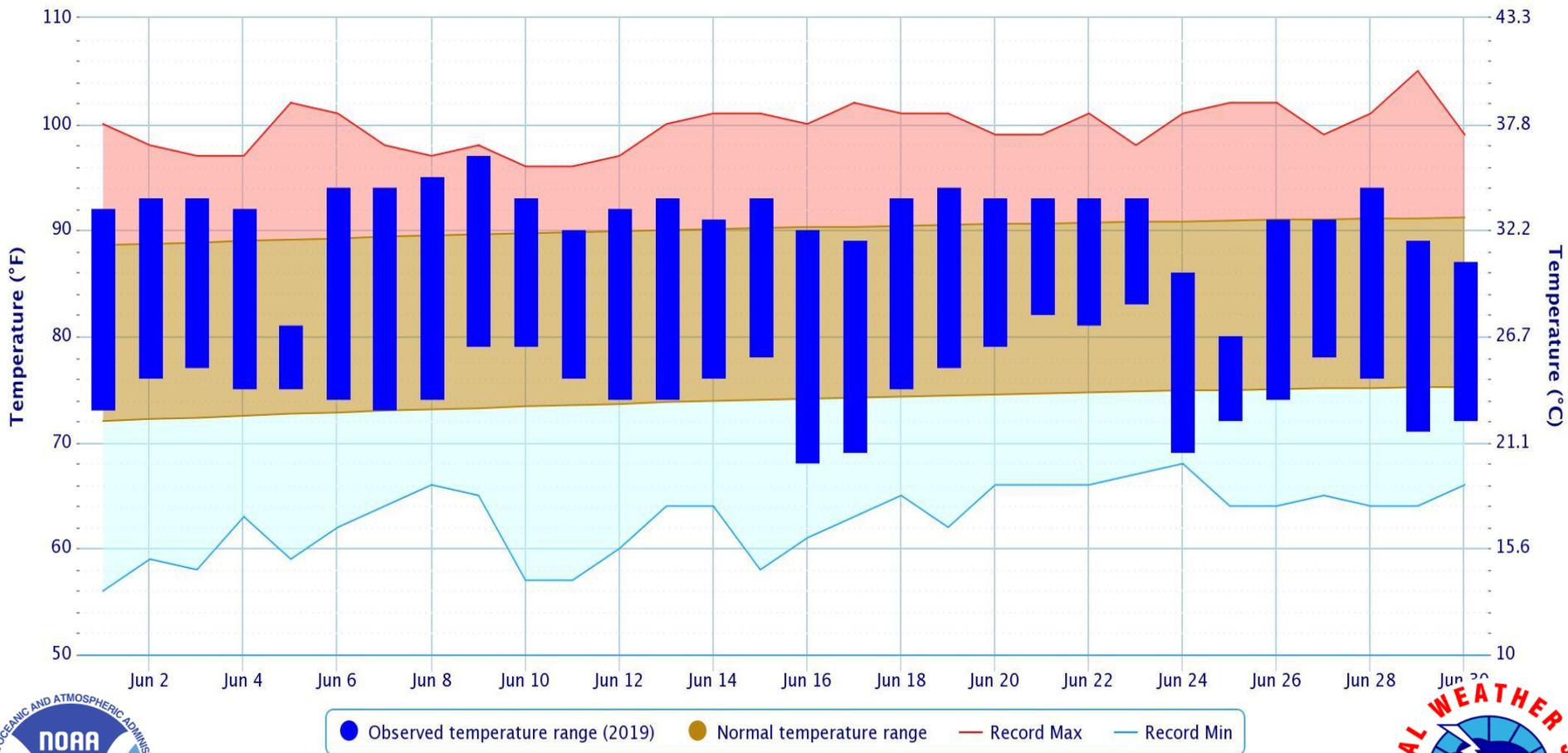
Daily Temperature Data – Houston Area, TX (ThreadEx)

Period of Record – 1889-05-01 to 2019-07-04. Normals period: 1981-2010. Click and drag to zoom chart.



Daily Temperature Data – HOUSTON WILLIAM P HOBBY AP, TX

Period of Record – 1930-08-01 to 2019-07-04. Normals period: 1981-2010. Click and drag to zoom chart.



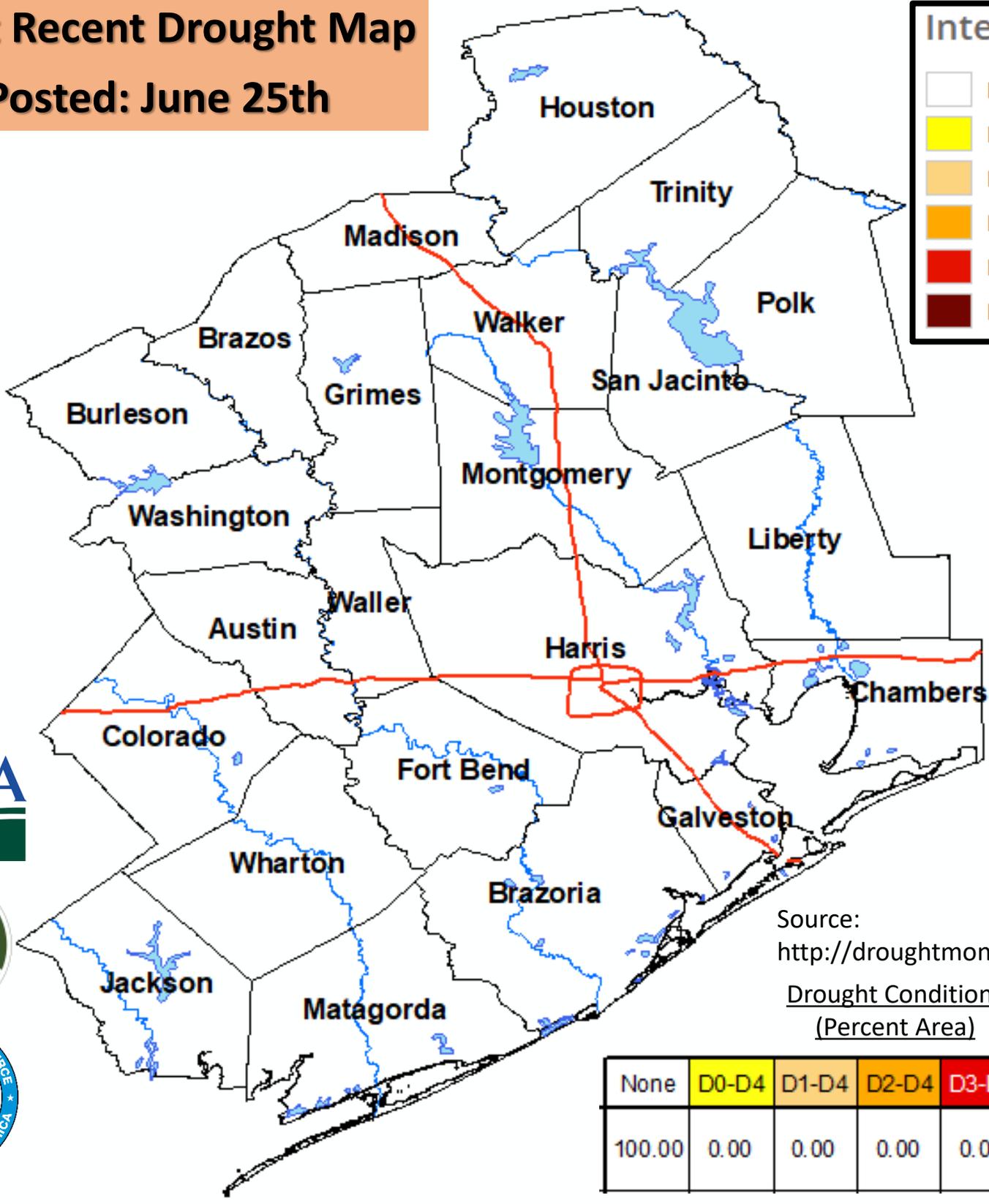
● Observed temperature range (2019) ● Normal temperature range — Record Max — Record Min



Drought Conditions

There was no sign of drought across SE TX by the end of the month of June.

Most Recent Drought Map
Posted: June 25th



Intensity:

- None
- D0 (Abnormally Dry)
- D1 (Moderate Drought)
- D2 (Severe Drought)
- D3 (Extreme Drought)
- D4 (Exceptional Drought)

Source:
<http://droughtmonitor.unl.edu>

Drought Conditions
 (Percent Area)

None	D0-D4	D1-D4	D2-D4	D3-D4	D4
100.00	0.00	0.00	0.00	0.00	0.00



June Record Reports

A total of 17 daily records were set across the primary climate sites.

Site	Date	Record Type	New Record	Previous Record
City of Galveston	June 7 th	High Max Temperature	93°	91° in 2008
City of Galveston	June 8 th	High Max Temperature	93°	91° in 2008
City of Houston	June 9 th	High Max Temperature	97°	97° in 1956
City of Galveston	June 19 th	High Min Temperature	82°	82° in 2011
City of Galveston	June 20 th	High Min Temperature	84°	82° in 2013
City of Houston	June 21 st	High Min Temperature	82°	82° in 2011
City of Galveston	June 21 st	High Min Temperature	85°	83° in 1990
City of College Station	June 21 st	High Min Temperature	81°	81° in 2011
Houston Hobby	June 21 st	High Min Temperature	82°	81° in 2011
City of Houston	June 22 nd	High Min Temperature	82°	79° in 1969
City of Galveston	June 22 nd	High Min Temperature	84°	83° in 1969
City of College Station	June 22 nd	High Min Temperature	82°	81° in 1915



June Record Reports (Continued)

A total of 17 daily records were set across the primary climate sites.

Site	Date	Record Type	New Record	Previous Record
Houston Hobby	June 22 nd	High Min Temperature	81°	80° in 1969
City of Galveston	June 23 rd	High Min Temperature	85°	83° in 1969
Houston Hobby	June 23 rd	High Min Temperature	83°	82° in 1969
City of Houston	June 23 rd	High Min Temperature	83°	81° in 1969
City of Houston	June 28 th	Hail/Snowfall	T	0 in 2018

A record high minimum temperature was set at Galveston on June 23rd. A low temperature of 85 degrees was recorded, beating the old record of 83 degrees set in 1944. This record of 85 degrees, not only tied the **warmest minimum temperature for the entire month of June** (previously recorded in 2012, 2011, and 1881) **but also for the entire year** (recorded four times in July and six times in August).

A record high minimum temperature was set at Houston Intercontinental Airport on June 23rd. A low temperature of 83 degrees was recorded, beating the old record of 81 degrees set in 1969. This record of 83 degrees is also the **warmest minimum temperature ever recorded in the month of June** and **but also tied for the entire year** (recorded July 5th, 2016 and August 12th, 2010).

Hail was reported at Houston Intercontinental Airport on June 28th. This is the first time ever that hail has been recorded at this site on this date, and the fourth time hail has fallen at this site in the month of June (previously recorded in 2012, 1996, and 1990). Because the hail stones measured less than an inch in diameter, a trace (T) was recorded. In official climate records (dictated by National Centers for Environmental Information or NCEI) at first order climate stations, hail is recorded using the snowfall variable when it is observed. Therefore a trace of snowfall has been recorded on this date in the official climate records for the city of Houston.



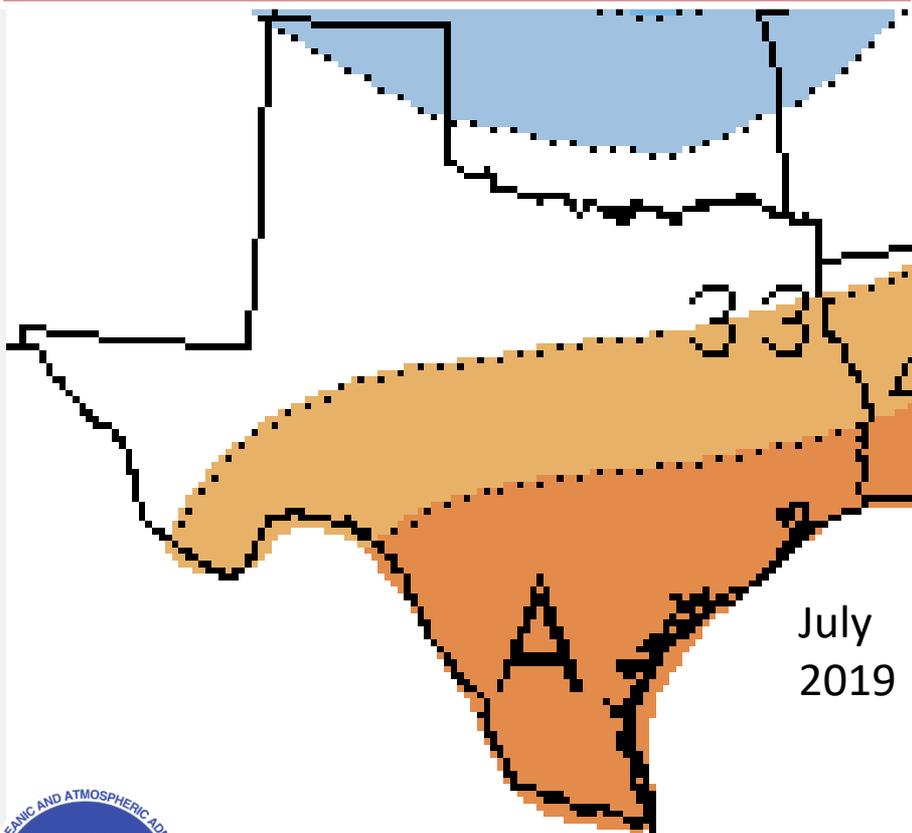
July Outlook

For July, the latest outlook from the Climate Prediction Center (CPC) calls for a 24% chance of below normal temperatures, a 43% chance of above normal temperatures and a 33% chance of normal temperatures across Southeast Texas. The precipitation outlook also calls for a 27% chance of above normal precipitation, a 33% chance of near normal precipitation and a 40% chance of below normal precipitation.

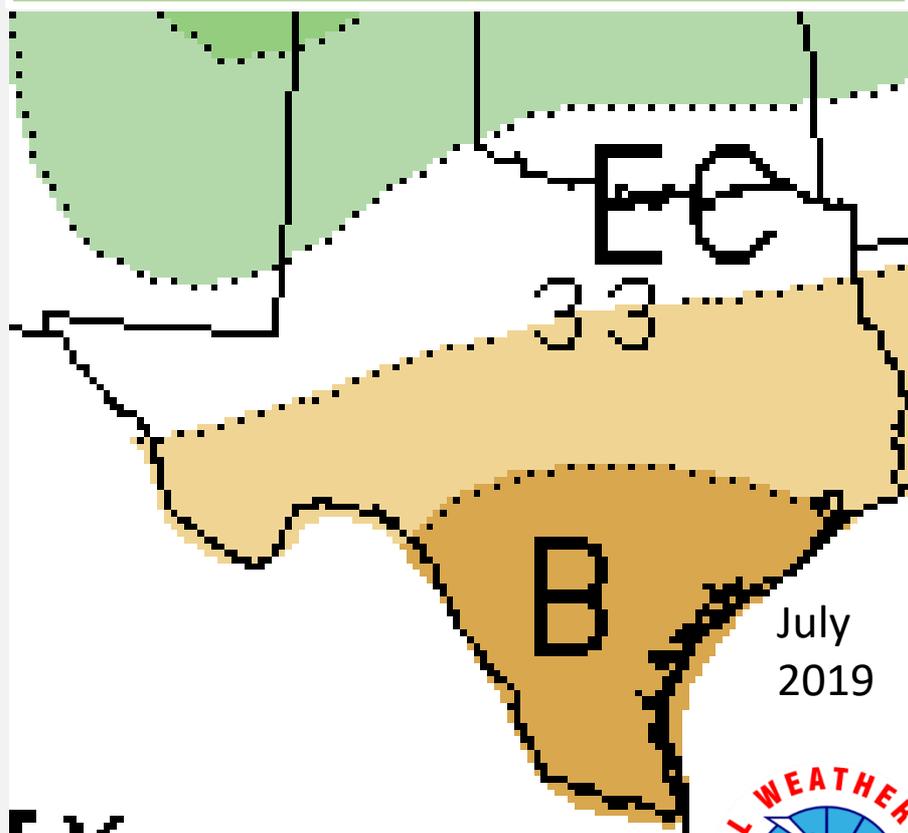
Site	Average Temp(°F)	Normal High (°F)	Normal Low (°F)
Galveston	84.5	89.6	79.4
Houston Hobby	83.8	92.1	75.5
City of Houston	84.4	93.7	75.1
College Station	84.7	94.8	74.6

Site	Normal Monthly Precipitation (in.)
Galveston (GLS)	3.80
Houston Hobby (HOU)	4.66
City of Houston (IAH)	3.79
College Station (CLL)	2.14

Temperature Outlook



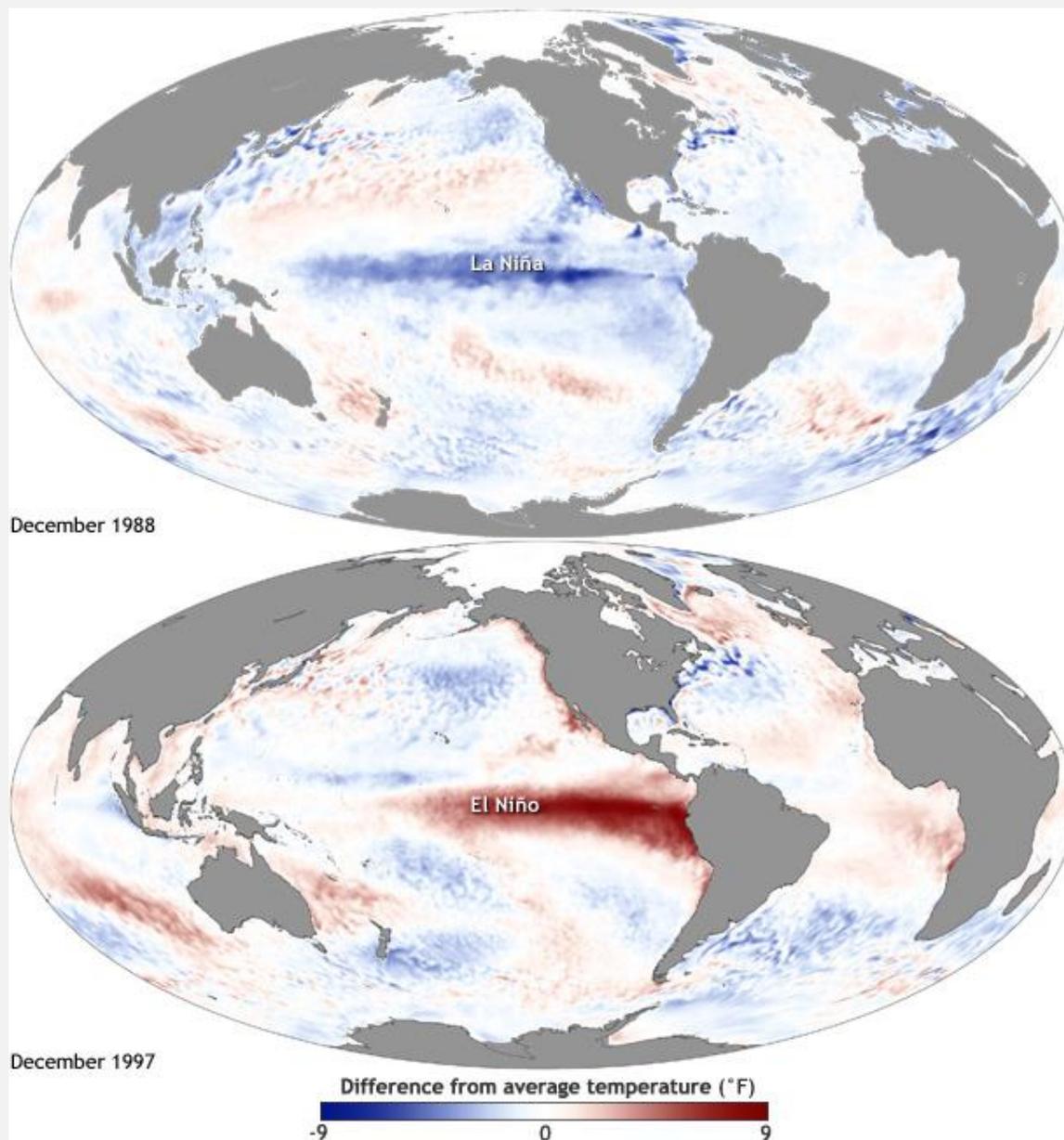
Precipitation Outlook



ENSO

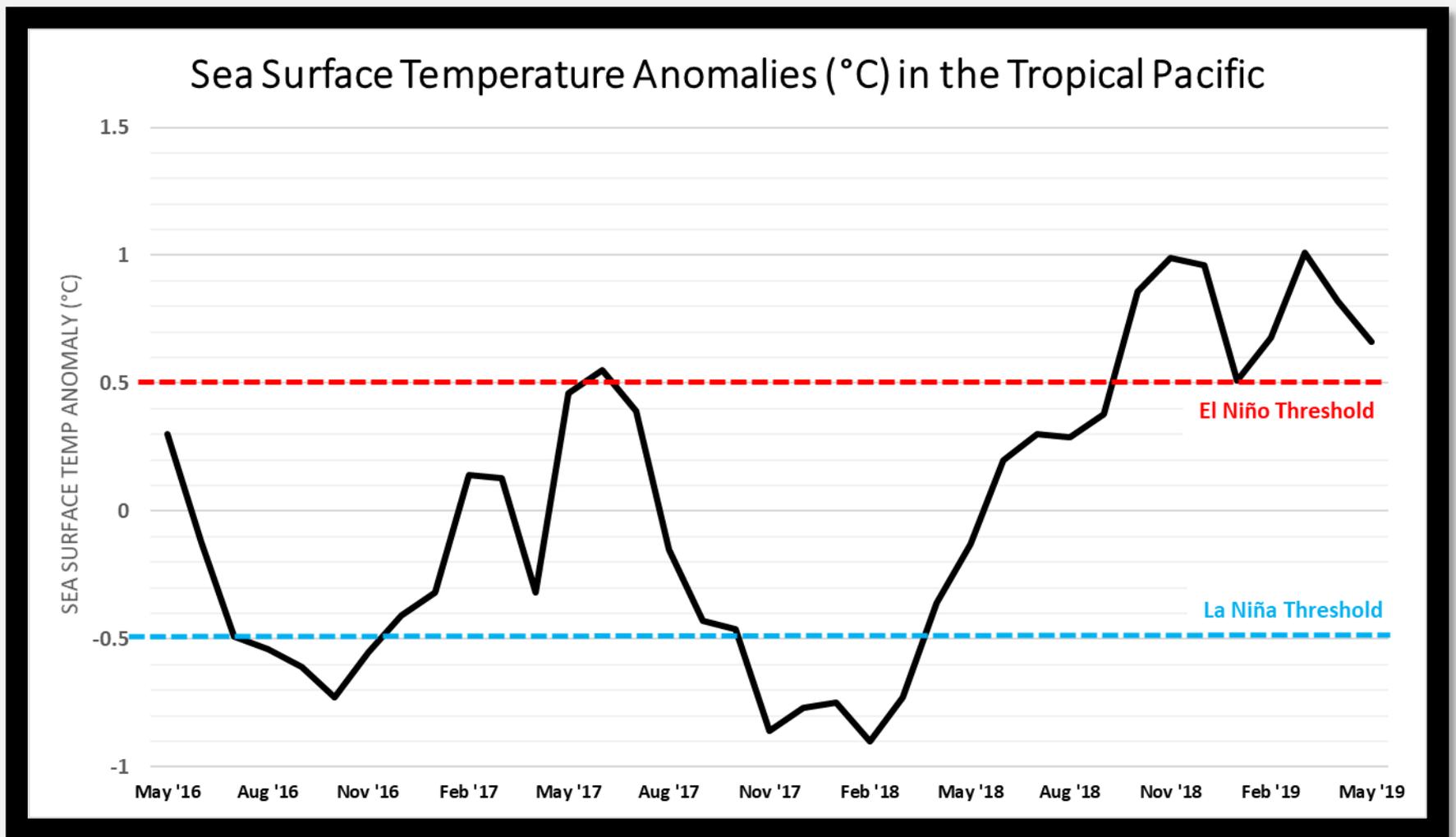
What is ENSO?

The El Niño-Southern Oscillation (ENSO) is a climate oscillation that occurs across the tropical Pacific Ocean that has impacts on weather patterns across the world. As the name alludes to, ENSO has two aspects: the oceanic aspect (El Niño) and atmospheric aspect (Southern Oscillation). The El Niño part refers to the oscillation of the sea surface temperatures (SSTs) across the tropical Pacific, and also includes the strength of the wind field north of the equator in the tropical Pacific (trade winds). The Southern Oscillation, also called the Walker Circulation, refers to atmospheric pressure anomalies across the Pacific Ocean. There are three phases to ENSO: Neutral, El Niño (when the tropical pacific is warmer than normal), and La Niña (when the tropical pacific is cooler than normal). The phase of ENSO can have impacts on the weather across the globe.



ENSO Observations

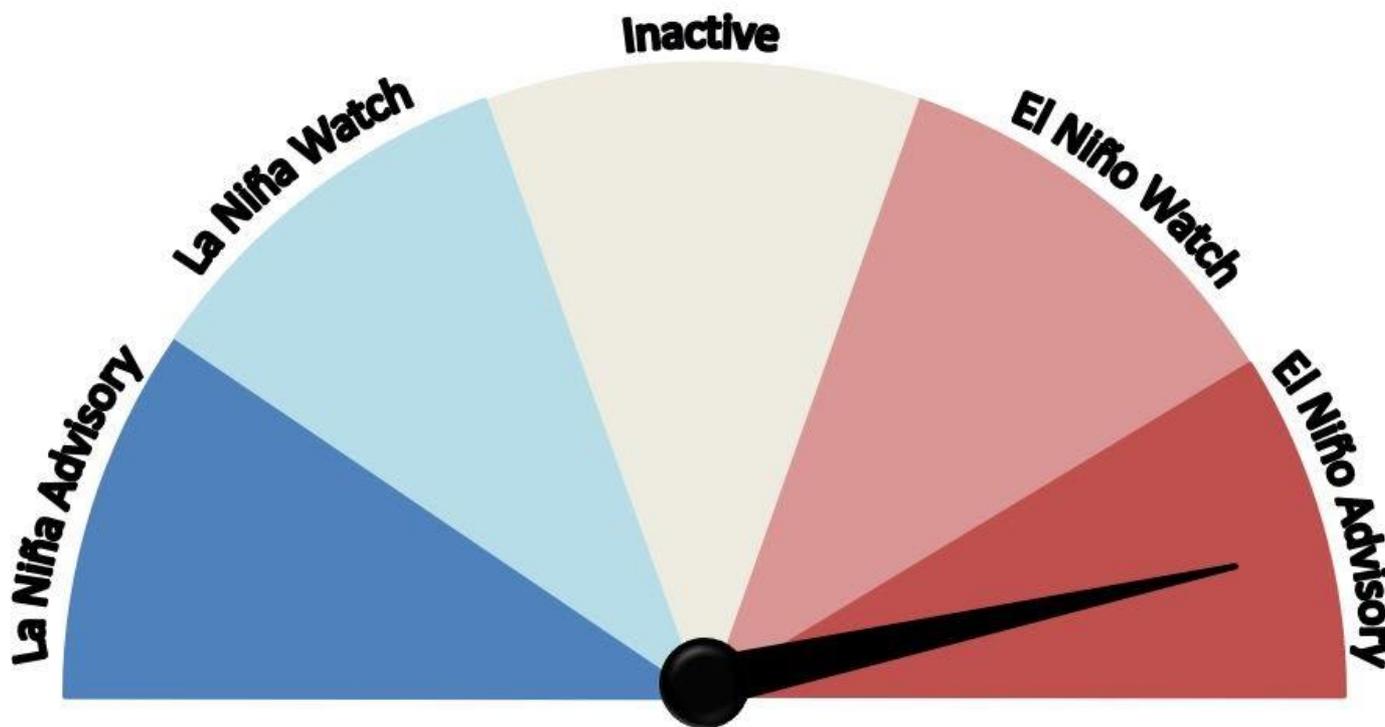
Sea Surface Temperature Anomalies across the Tropical Pacific Ocean from May 20 – 26, 2019



ENSO Forecast

The Climate Prediction Center's ENSO Forecast: **El Niño Continues**

- 66% Chance of El Niño continuing through the Summer
- 50-55% Chance of El Niño continuing through the Fall & Winter



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.

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).

Houston Hobby (HOU)

Records are based upon observations beginning in August 1931.

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 .

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.

