

NWS Houston, Texas December 2019 Regional Climate Summary

Produced by Jimmy Fowler and Josh Lichter

. . . Warm and Very Dry December leading to Expanding Drought Conditions. . .

High pressure dominated the weather across Southeast Texas for the month of December with a few cold fronts passing through bringing showers and thunderstorms. However, a majority of these showers and thunderstorms were light and scattered in nature. This led to a much below normal month for precipitation with most of the region getting less than inch of rain total for the entire month, which is about two to three inches below normal. These dry conditions led to an expansion of the drought conditions across the region. The dry conditions combined with high pressure also led to a warmer than average December with much of the region being around three to four degrees above normal.

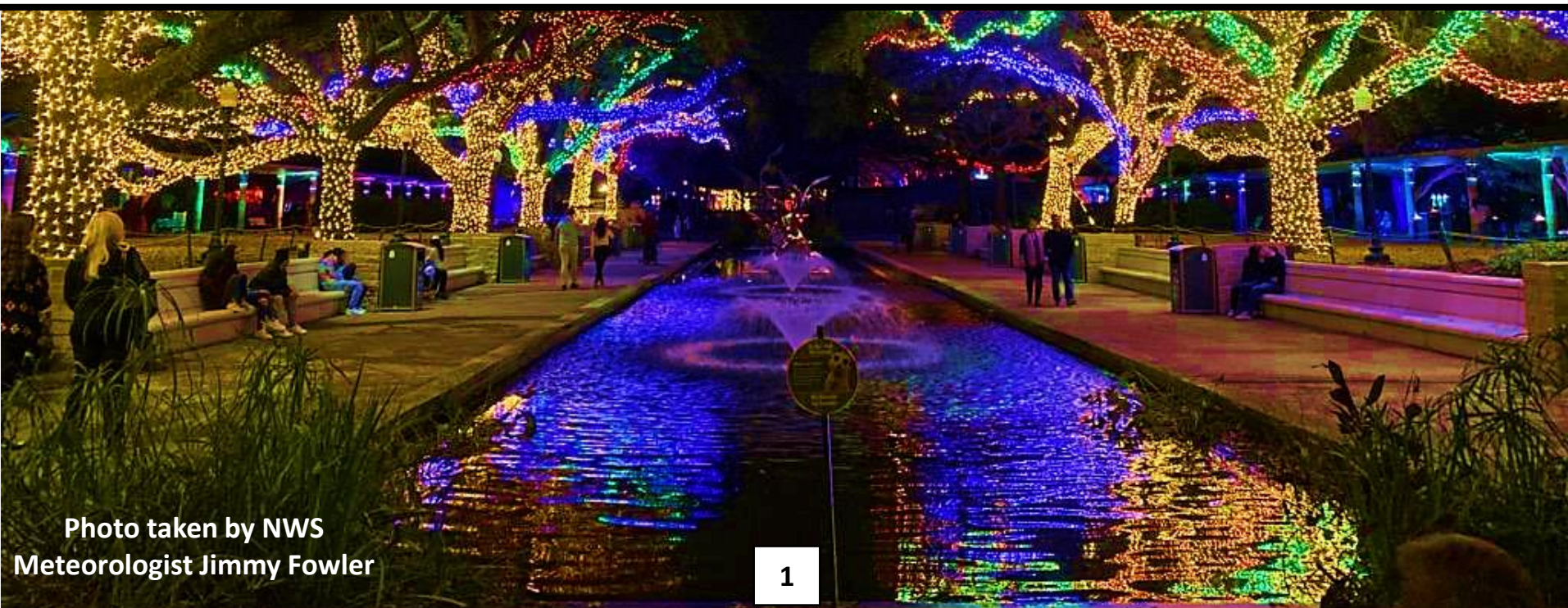


Photo taken by NWS
Meteorologist Jimmy Fowler

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December 2019 by the Numbers

Location (records started)	Average Temp	Ranking	Total Rainfall	Ranking
City of Houston, TX (1888)	57.6°F	24 th Warmest	1.14''	8 th Driest
Houston Hobby, TX (1930)	59.0°F	10 th Warmest	0.84''	4 th Driest
City of Galveston, TX (1871)	61.2°F	12 th Warmest	0.98''	9 th Driest
City of College Station, TX (1882)	56.0°F	16 th Warmest	0.56''	9 th Driest
Conroe, TX (1997)	53.6°F	7 th Warmest	1.80''	6 nd Driest
Huntsville, TX (1997)	54.6°F	5 th Warmest	0.92''	3 rd Driest
Sugar Land, TX (2000)	57.7°F	6 th Warmest	0.73''	2 nd Driest
Palacios, TX (1943)	58.1°F	26 th Warmest	1.28''	20 th Driest
Clover Field (Pearland), TX (1997)	58.5°F	6 th Warmest	0.68''	#1 Driest
David Wayne Hooks (Tomball), TX (1998)	55.5°F	6 th Warmest	1.51''	4 th Driest
Angleton, TX (1998)	57.6°F	6 th Warmest	1.36''	5 th Driest
League City, TX (1990)	57.3°F	6 th Warmest	1.56''	3 rd Driest



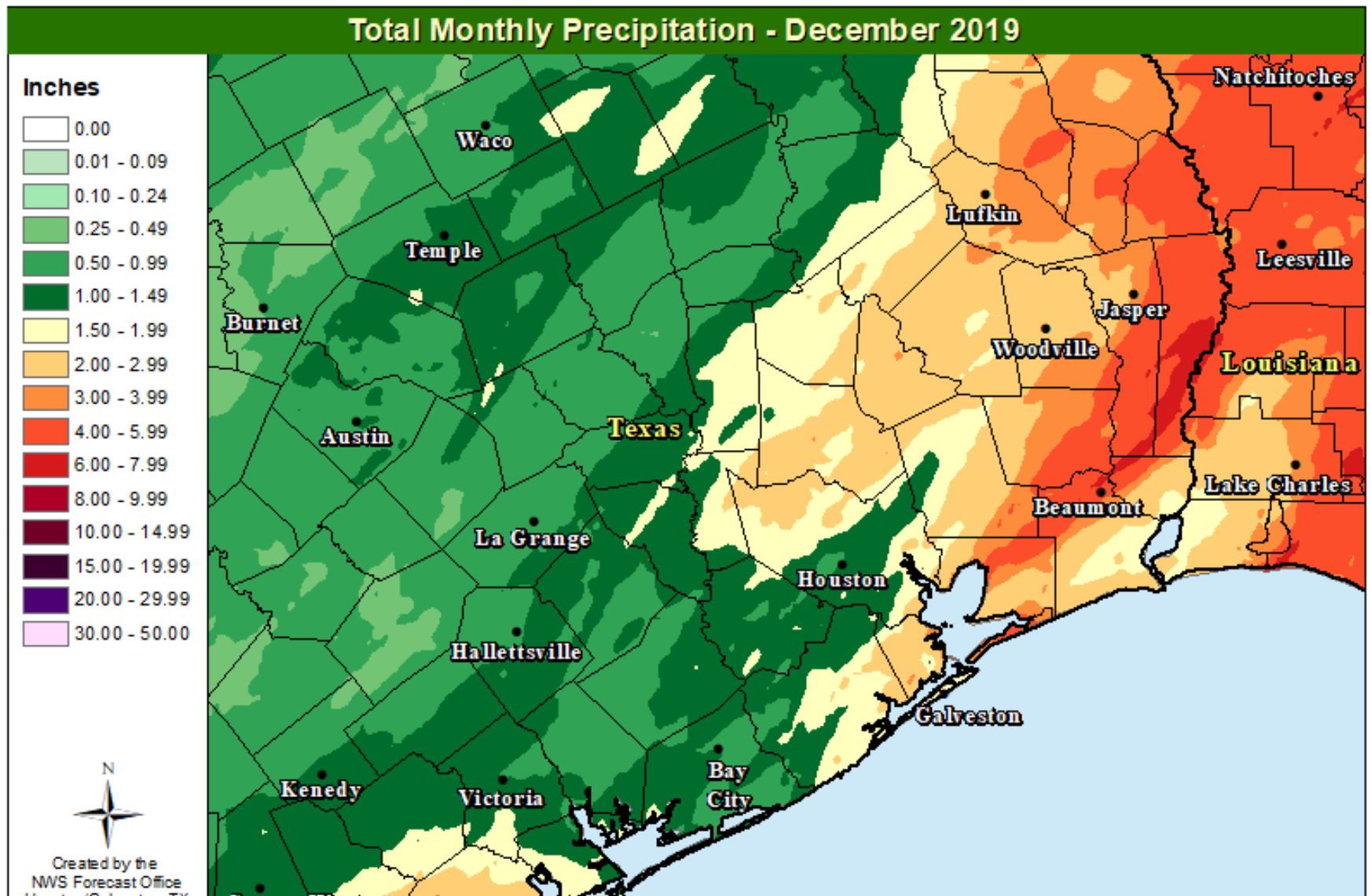
Precipitation

Like November, the primary source of precipitation this month was from cold fronts that pushed through Southeast Texas, however not much precipitation actually accompanied these fronts. Most of the region saw less than an inch of rain, with the only primary climate site getting over an inch was the City of Houston. This led to the entire region experiencing much below normal precipitation. All the primary climate sites had monthly total precipitation rank in the top 10 driest recorded. The Cities of College Station and Galveston had their 9th driest December, City of Houston ranked the 8th driest December, and Houston-Hobby experienced their 4th driest December on record.

Site	Total Precipitation (in.)	Departure from Normal (in.)	Number of Thunder Days	Maximum Daily Precipitation (in./date)	
Galveston (GLS)	0.98	-2.54	1	0.36	16 th
Houston Hobby (HOU)	0.84	-3.19	1	0.58	10 th
City of Houston (IAH)	1.14	-2.60	2	0.73	29 th
College Station (CLL)	0.56	-2.67	0	0.40	10 th

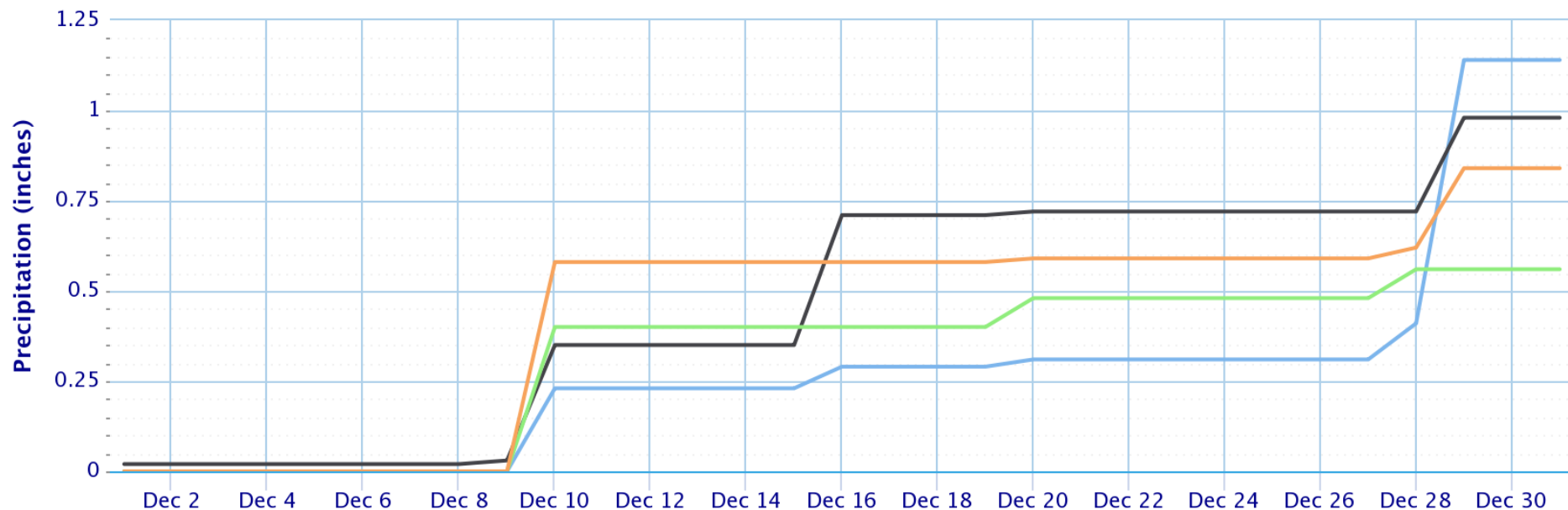


Precipitation (Continued)



Accumulated Precipitation

Green/black diamonds represent subsequent/missing values



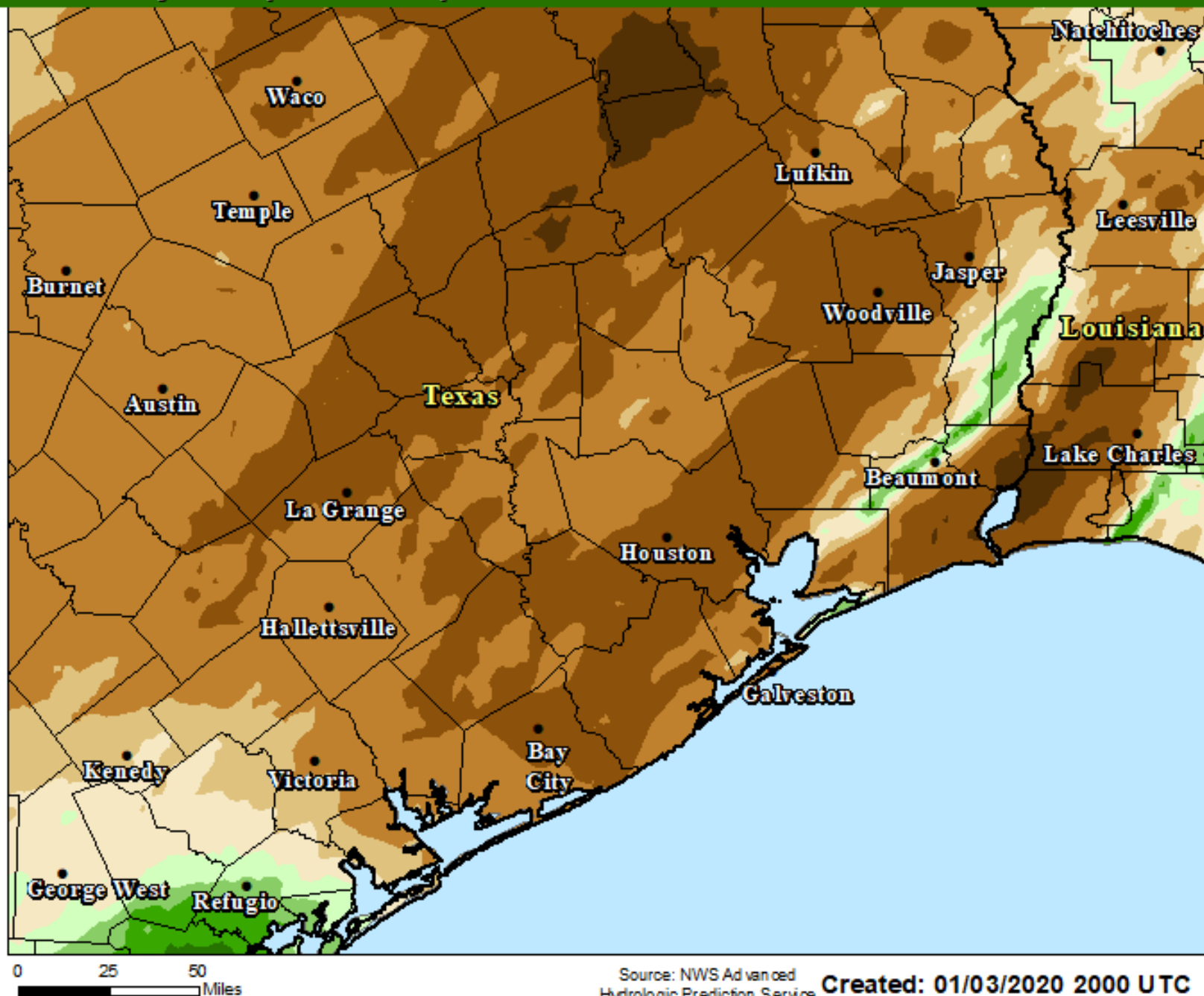
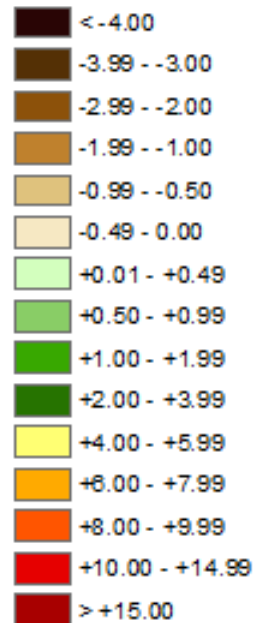
(Click to hide/show lines)

— Houston Area, TX (ThreadEx):Precip — Galveston Area, TX (ThreadEx):Precip — College Station Area, TX (ThreadEx):Precip
— HOUSTON WILLIAM P HOBBY AP, TX:Precip

Precipitation (Continued)

Total Monthly Precipitation Departure From Normal - December 2019

Inches



Created by the
NWS Forecast Office
Houston/Galveston, TX



0 25 50
Miles

Source: NWS Advanced
Hydrologic Prediction Service

Created: 01/03/2020 2000 UTC



Temperatures

There were a couple of cold fronts that brought temperatures down to near or below normal for a few days over the month, but overall it was an above normal December. December ended up around three to four degrees above normal across much of the region with Houston-Hobby experiencing their 10th warmest December on record. The coldest the region experienced was after a cold front pushed through on December 18th that brought subfreezing temperatures to the Cities of Houston and College Station. The Cities of Houston and College Station, along with Houston-Hobby, climbed into the low to mid 80s a couple of times this month, usually the day before a cold front passed through the region when the southerly flow was the strongest. There were a total of nine temperature records set this month, eight of which were record high maximum temperatures and one was a record high minimum temperature.

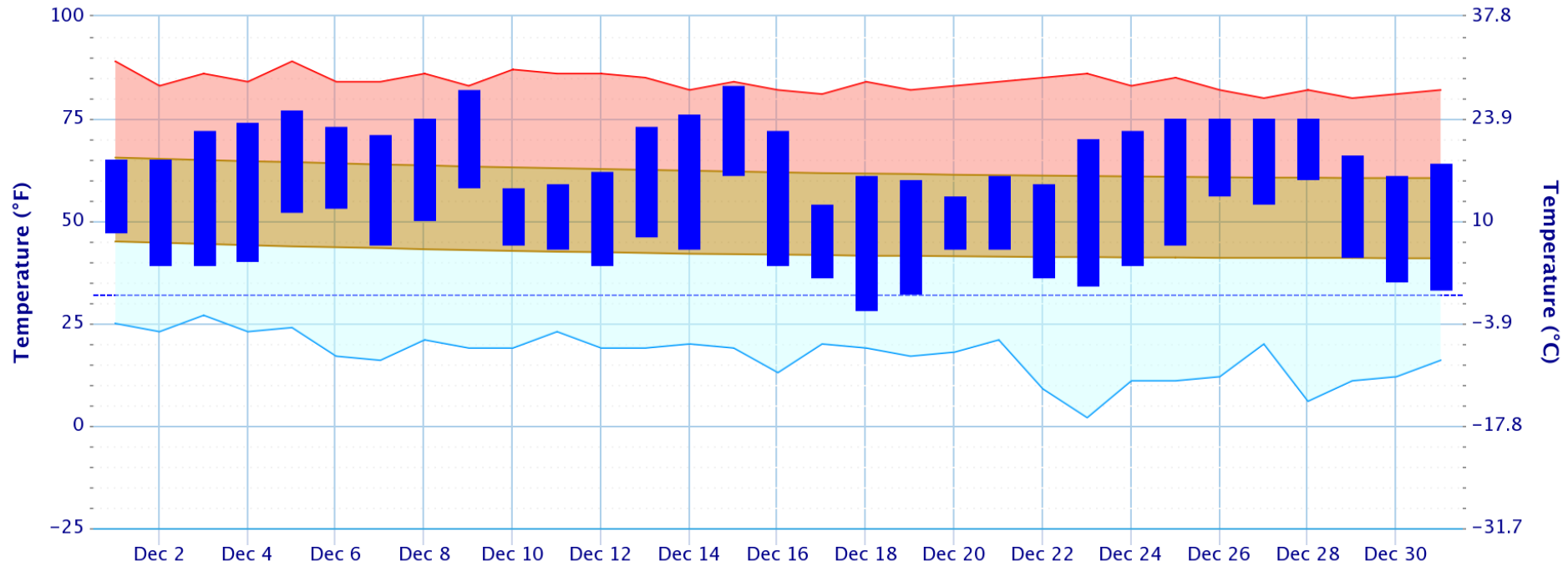
Site	Average Temp (F)	Average High Temp (F)	Average Low Temp (F)	Normal Average Temp (F)	Departure From Normal (F)	Maximum Temperature (F)	Minimum Temperature (F)
Galveston (GLS)	61.2	68.2	54.3	57.3	+3.9	79 on Dec. 6 th	43 on Dec. 17 th
Houston Hobby (HOU)	59.0	69.3	48.7	55.6	+3.4	84 on Dec. 9 th	35 on Dec. 18 th
City of Houston (IAH)	57.6	69.5	45.8	54.4	+3.2	84 on Dec. 9 th & 15 th	31 on Dec. 19 th
College Station (CLL)	56.0	68.4	43.6	52.2	+3.8	83 on Dec. 15 th	28 on Dec. 18 th



Monthly Temperature Charts

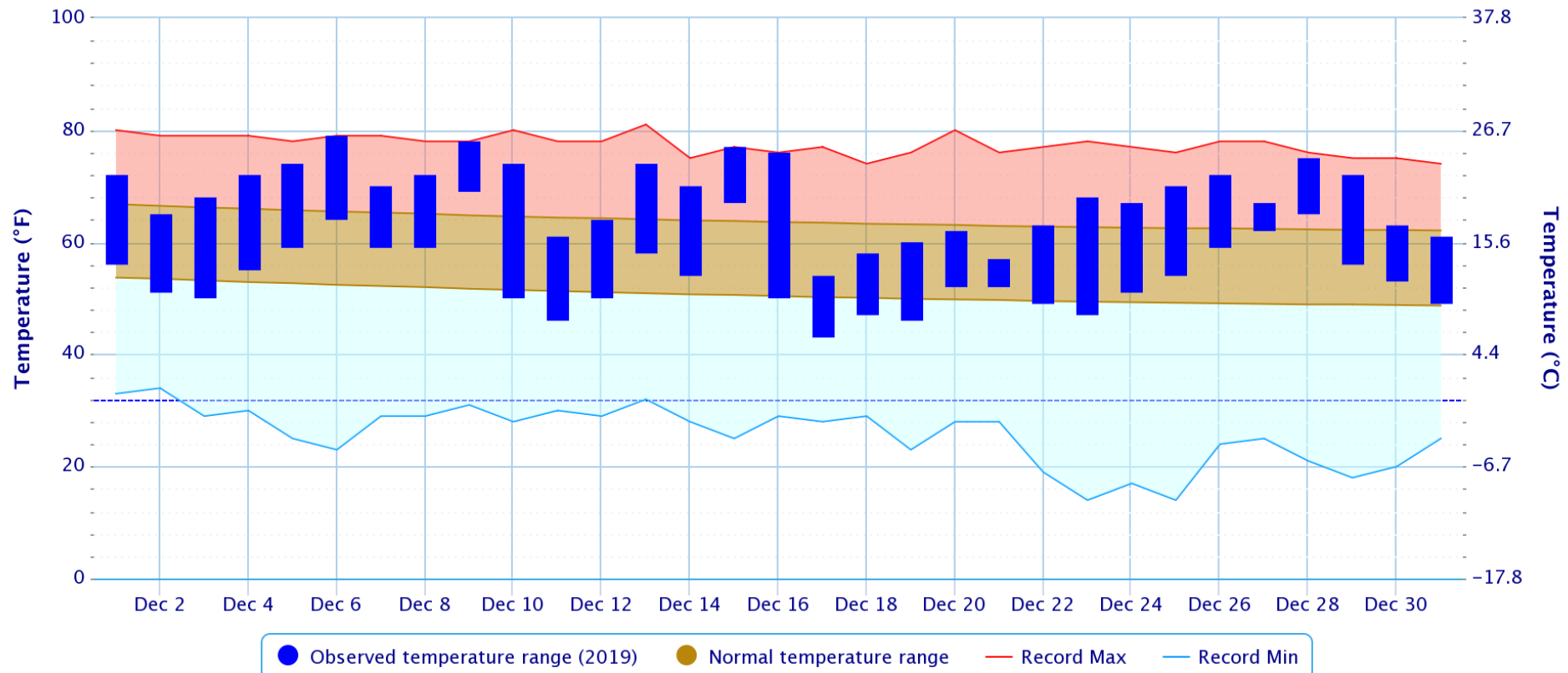
Daily Temperature Data – College Station Area, TX (ThreadEx)

Period of Record – Max temperature: 1888-10-01 to 2020-01-06; Min temperature: 1882-05-15 to 2020-01-06. Normals period: 1981-2010.
Click and drag to zoom chart.



Daily Temperature Data – Galveston Area, TX (ThreadEx)

Period of Record – 1874-05-10 to 2020-01-06. Normals period: 1981-2010. Click and drag to zoom chart.



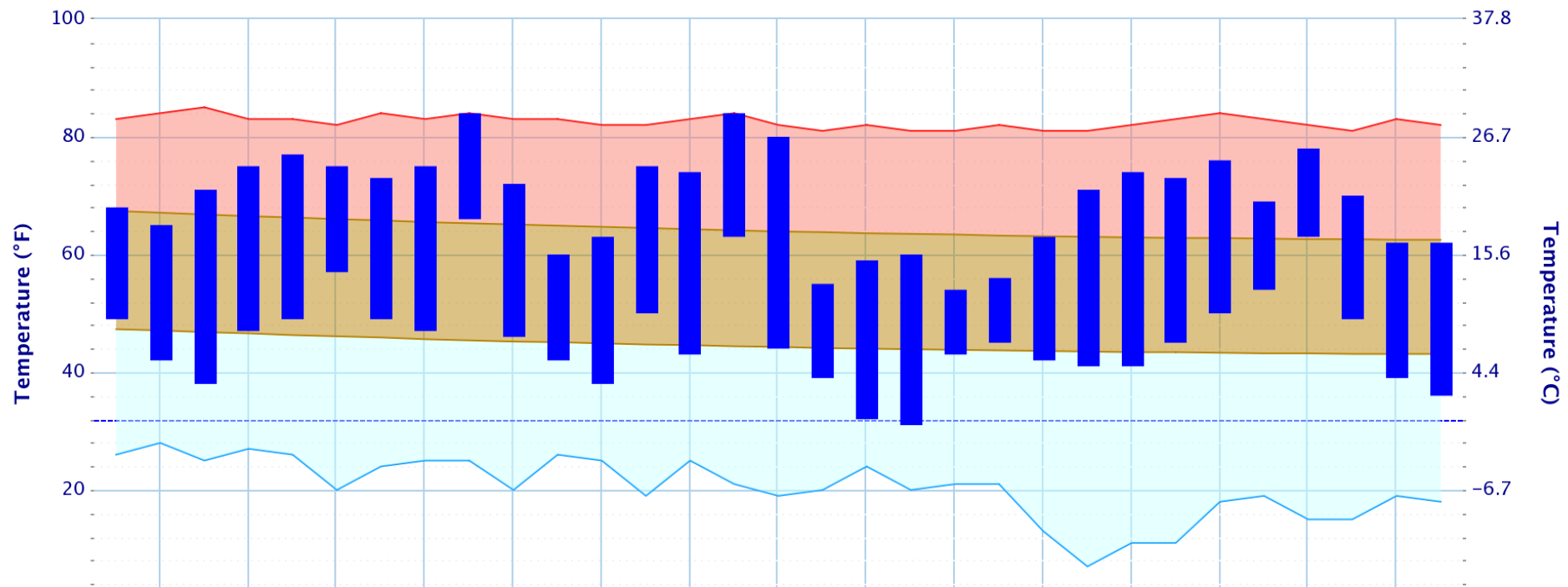
Powered by ACIS



Monthly Temperature Charts (continued)

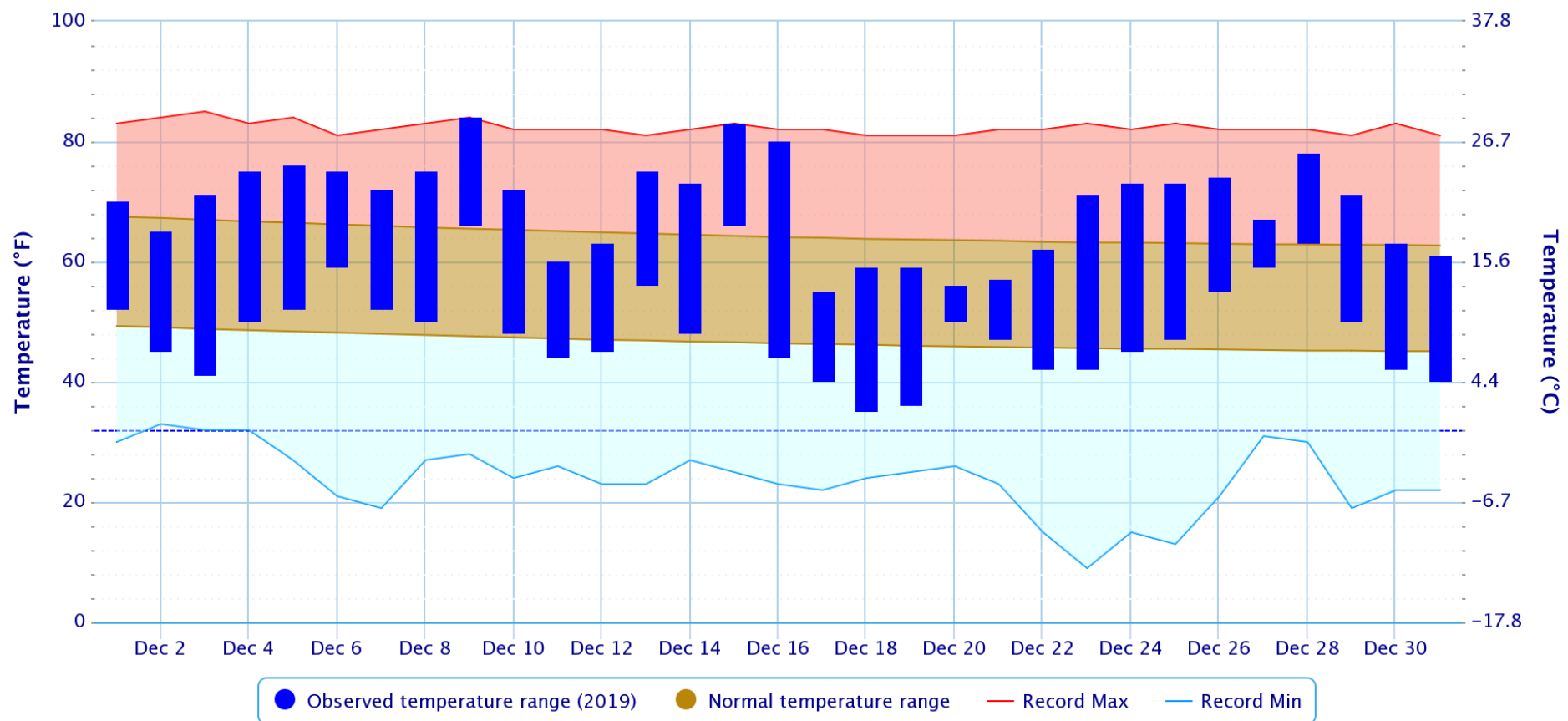
Daily Temperature Data – Houston Area, TX (ThreadEx)

Period of Record – 1889-05-01 to 2020-01-06. 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 2020-01-06. Normals period: 1981-2010. Click and drag to zoom chart.



Powered by ACIS



December Daily Record Reports

A total of 9 daily records were set across the primary climate sites. T stands for tied.

Site	Date	Record Type	New Record	Previous Record
City of Houston	December 9 th	High Max Temperature	84°	82° in 2007
City of Houston	December 15 th	High Max Temperature	84°	82° in 1995
Houston Hobby	December 9 th	High Max Temperature	84°	82° in 2007
Houston Hobby	December 15 th	High Max Temperature	83°	81° in 1995
City of Galveston	December 6 th	High Max Temperature	79° - T	79° in 1998
City of Galveston	December 9 th	High Min Temperature	69°	68° in 2007
City of Galveston	December 9 th	High Max Temperature	78° - T	78° in 2007
City of Galveston	December 15 th	High Max Temperature	77° - T	77° in 2012
City of Galveston	December 16 th	High Max Temperature	76°	75° in 2010

High Max

Low Max

Precip

High Min

Low Min

Key



Drought Conditions

The unseasonably dry month of December lead to an expansion of the drought conditions across the region. Most of the northern and western portions of the area are in D1 – Moderate Drought, while portions of Houston, Burleson, and Jackson counties have even entered into D2 Severe Drought. With dry conditions extending into January, further expansion of the drought is expected.

Drought Monitor

Posted: December 31st

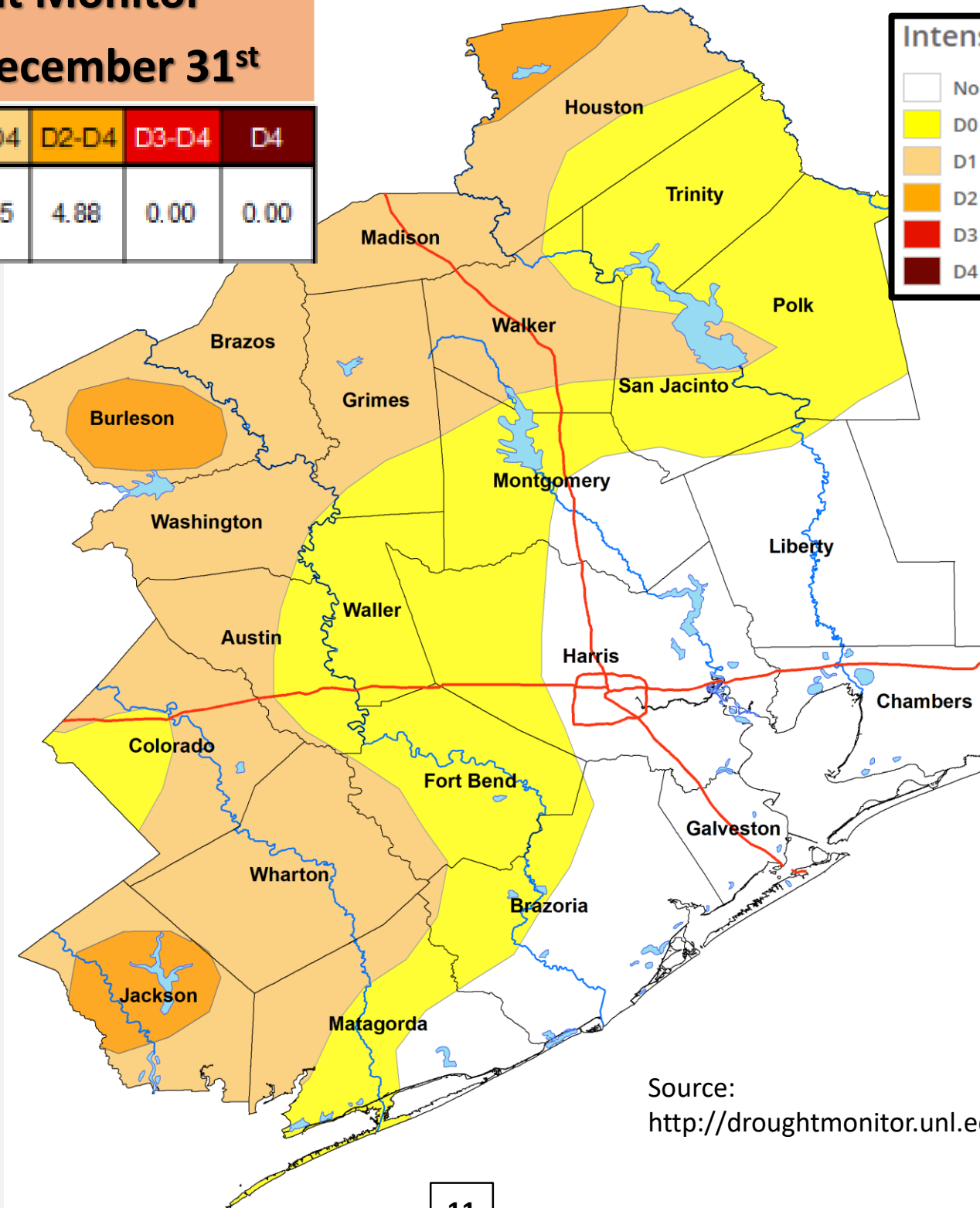
0 12.5 25 50 75 100 Miles

Intensity:

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

None	D0-D4	D1-D4	D2-D4	D3-D4	D4
25.68	74.32	41.65	4.88	0.00	0.00

Drought Conditions
(Percent Area)



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



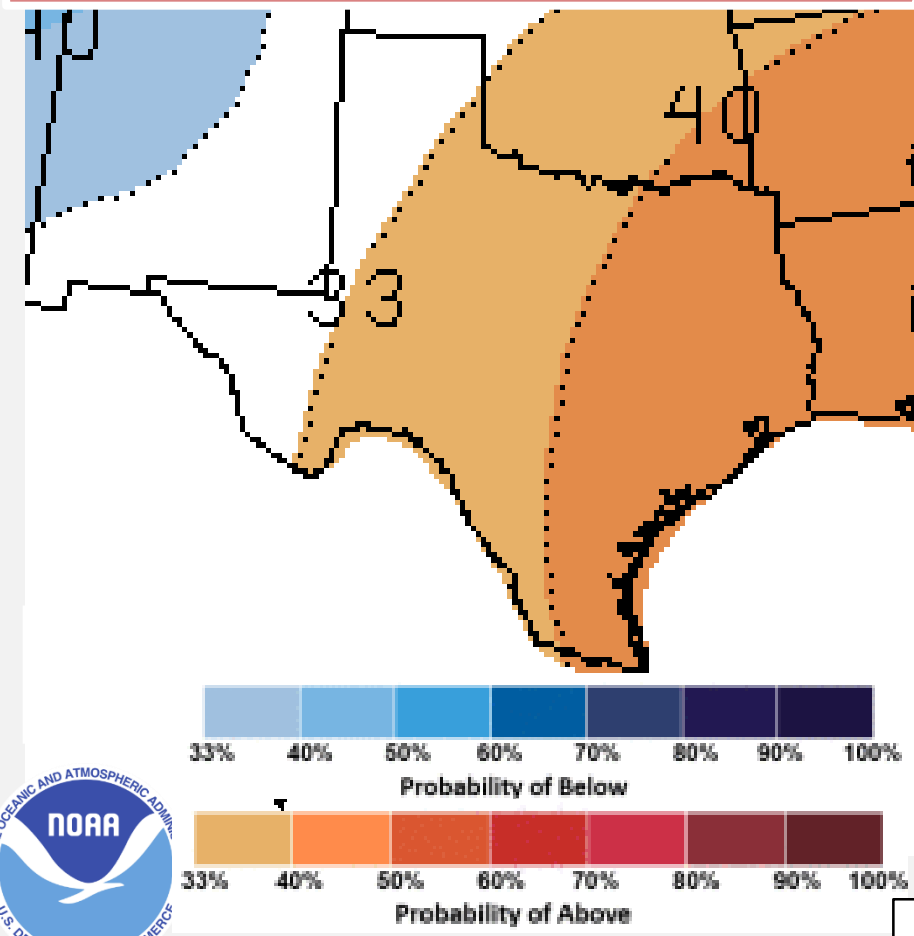
January Outlook

For January, the latest outlook from the Climate Prediction Center (CPC) calls for a 44% chance of above normal temperatures, a 33% chance of near normal temperatures, and a 23% chance for below normal temperatures across our area. The precipitation outlook calls for equal chances (33%) for the area to see either above, below, or near normal precipitation across much of Texas.

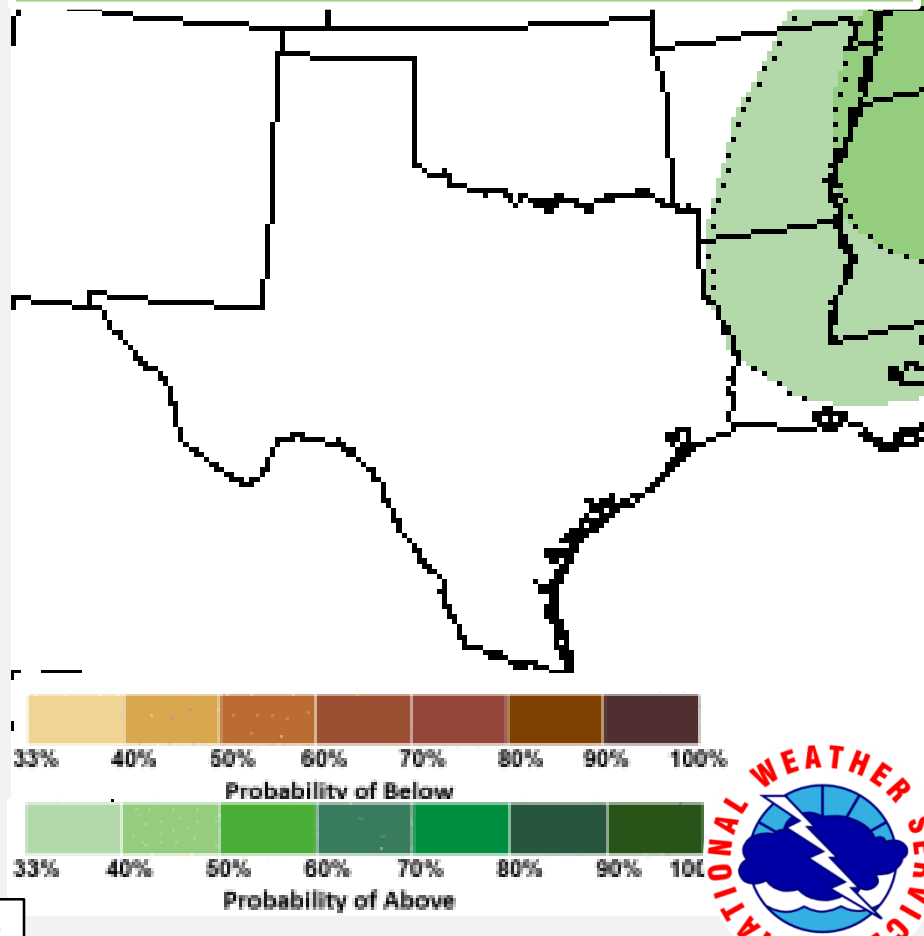
Site	Average Temp(°F)	Normal High (°F)	Normal Low (°F)
Galveston	55.2	61.8	48.6
Houston Hobby	54.1	63.0	45.1
City of Houston	53.1	62.9	43.2
College Station	51.1	61.0	41.2

Site	Normal Monthly Precipitation (in.)
Galveston (GLS)	4.20
Houston Hobby (HOU)	3.87
City of Houston (IAH)	3.38
College Station (CLL)	3.24

Temperature Outlook

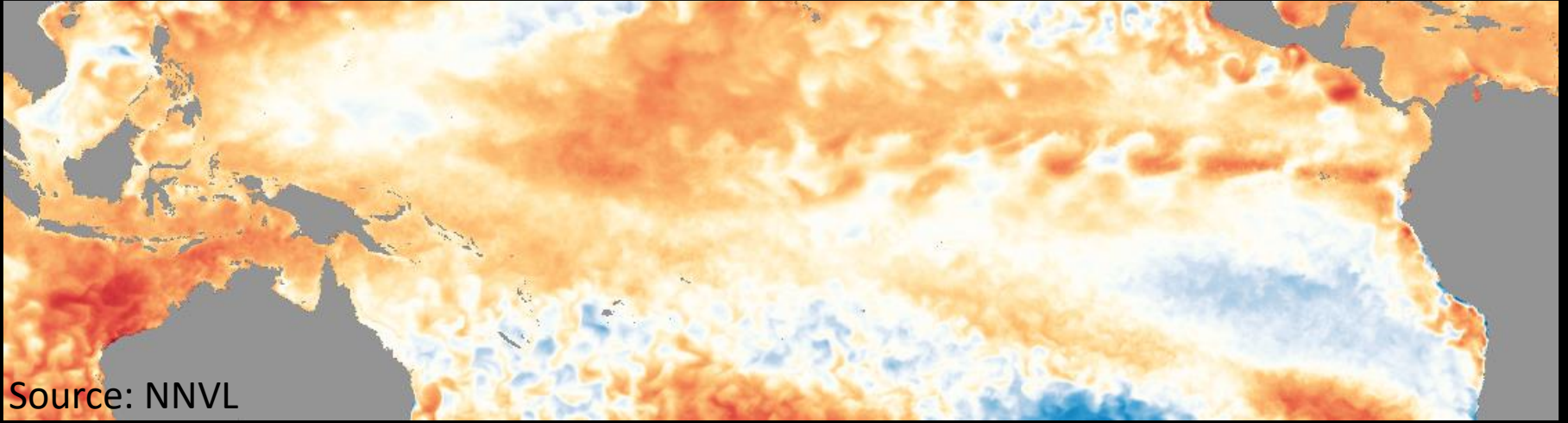


Precipitation Outlook



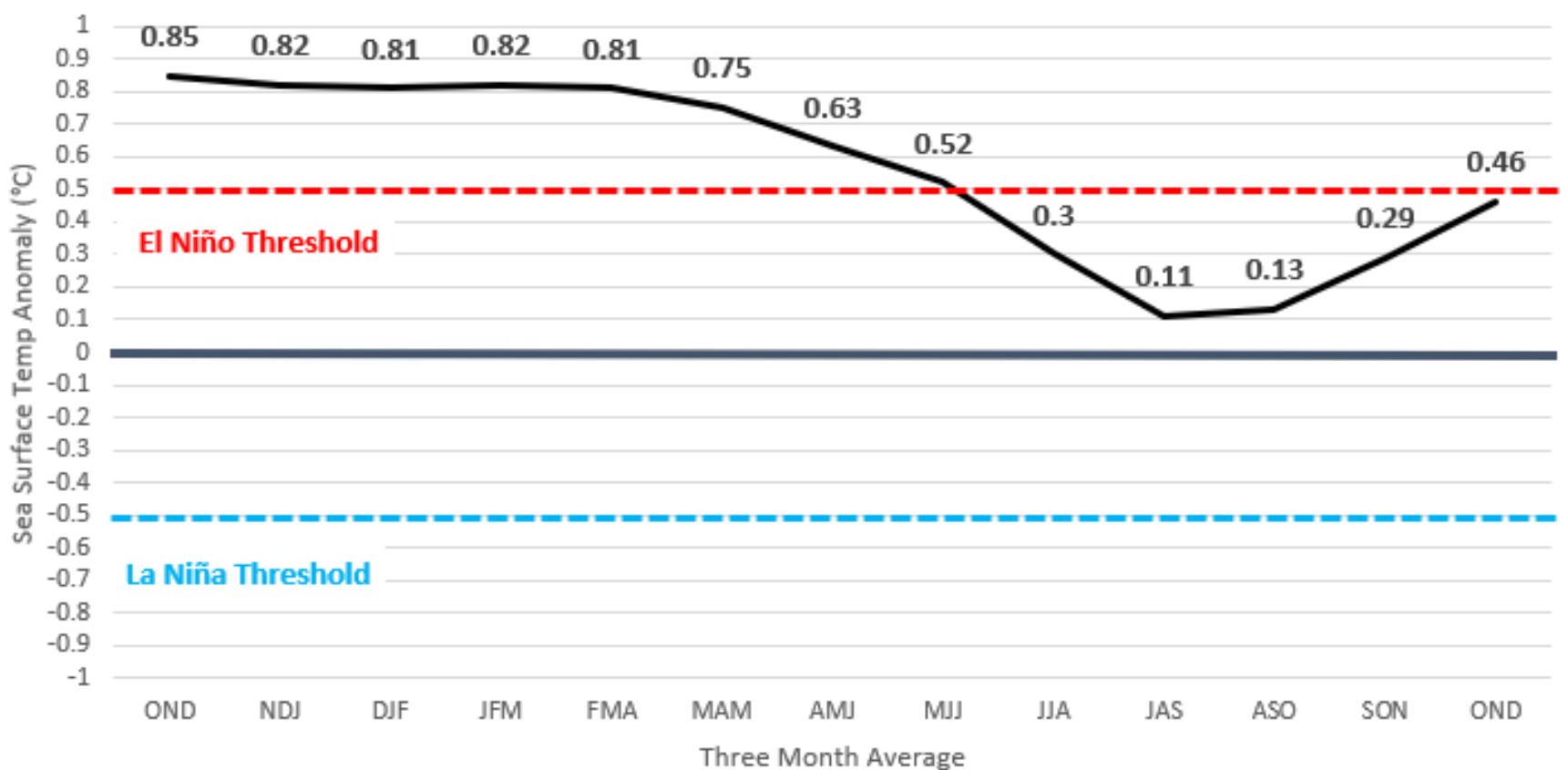
ENSO Observations

Sea Surface Temperature Anomalies across the Tropical Pacific Ocean during the month of December



Current ENSO Phase: Neutral

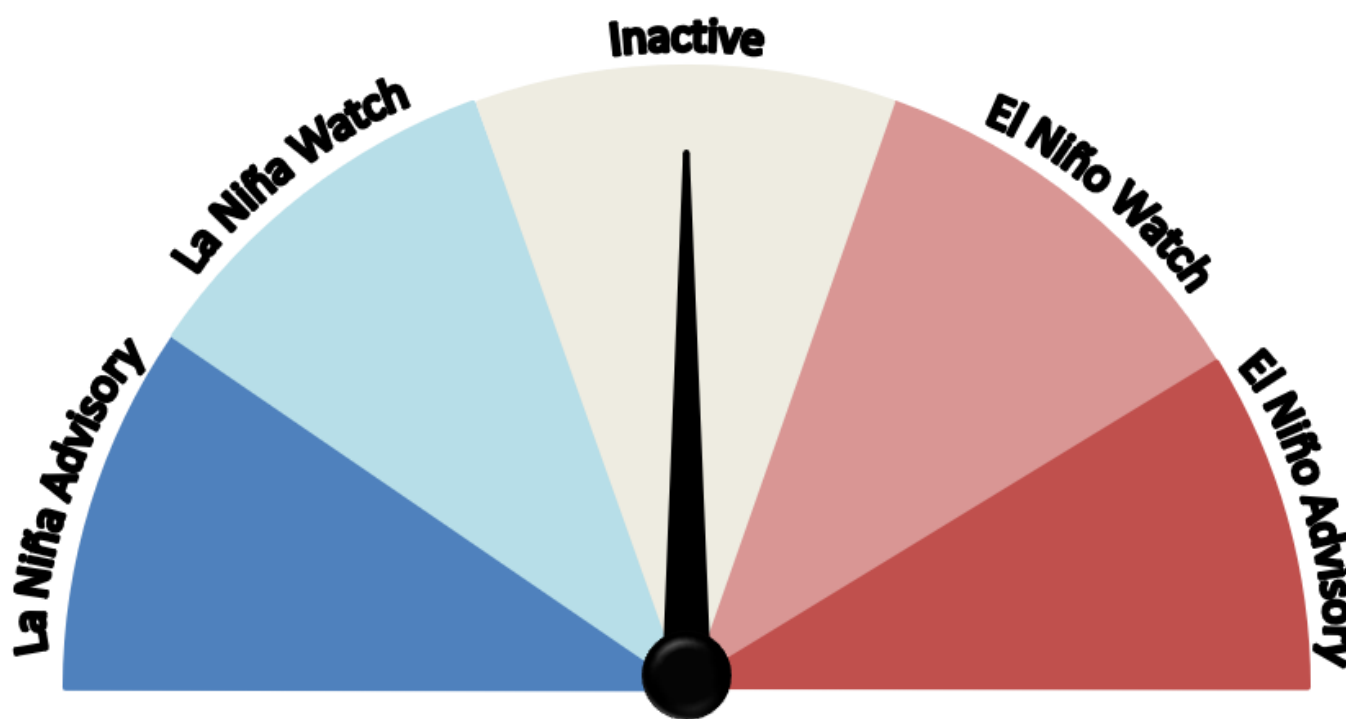
Sea Surface Temperature Anomalies (°C) in the Tropical Pacific



ENSO Forecast

The Climate Prediction Center's ENSO Forecast: ENSO-Neutral Continues

- There is a 60% chance of ENSO-Neutral conditions continuing through the spring
- There is a 50% chance of ENSO-Neutral conditions continuing through the summer



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.

