## NWS Houston, Texas December 2021 Regional Climate Summary

Produced by Jimmy Fowler
...Warmest December on Record for Most of Southeast Texas...
Extremely warm conditions led to our warmest December on record for most of the area, and it wasn't even close. There were 74 daily temperature records set across the area for either record daily high mins or maxes with Galveston, Houston, and Houston-Hobby experiencing their warmest December days on record. This past December was closer climatologically to our typical March/April than it was to our typical December. Below average rainfall for the month led to the expansion of drought conditions across most of the area.

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## By the Numbers: December 2021

| Location <br> (records started) | Average Temp | Ranking | Total Rainfall | Ranking |
| :---: | :---: | :---: | :---: | :---: |
| City of Houston, TX (1888) | $67.8^{\circ} \mathrm{F}$ | Warmest on Record | 2.10" | 29th Driest |
| Houston Hobby, TX (1930) | $69.8{ }^{\circ} \mathrm{F}$ | Warmest on Record | 1.85" | 20 ${ }^{\text {th }}$ Driest |
| City of Galveston, TX (1871) | $69.9{ }^{\circ} \mathrm{F}$ | Warmest on Record | 1.19" | $11^{\text {th }}$ Driest |
| City of College Station, TX (1882) | $66.5^{\circ} \mathrm{F}$ | $2^{\text {nd }}$ Warmest | 2.29' | 47 ${ }^{\text {th }}$ Driest |
| Conroe, TX (1997) | $64.9{ }^{\circ} \mathrm{F}$ | Warmest on Record | 4.43" | $5^{\text {th }}$ Wettest |
| Huntsville, TX (1997) | $67.0^{\circ} \mathrm{F}$ | Warmest on Record | 1.15" | $4^{\text {th }}$ Driest |
| Sugar Land, TX (2000) | $69.2{ }^{\circ} \mathrm{F}$ | Warmest on Record | 2.40" | $9^{\text {th }}$ Driest |
| Palacios, TX (1943) | $67.9^{\circ} \mathrm{F}$ | Warmest on Record | 0.90" | 12 ${ }^{\text {th }}$ Driest |
| Clover Field (Pearland), TX (1997) | $67.9^{\circ} \mathrm{F}$ | Warmest on Record | 3.01" | 10 ${ }^{\text {th }}$ Driest |
| David Wayne Hooks (Tomball), TX (1998) | $67.2^{\circ} \mathrm{F}$ | Warmest on Record | 1.70' | $7^{\text {th }}$ Driest |
| Angleton, TX (1998) | $68.1{ }^{\circ} \mathrm{F}$ | Warmest on Record | 2.41 " | 12 ${ }^{\text {th }}$ Driest |
| League City, TX (1990) | $67.2{ }^{\circ} \mathrm{F}$ | Warmest on Record | 2.00" | $5^{\text {th }}$ Driest |

## Precipitation



## Precipitation Accumulation Graph



## Precipitation Maps



## Temperature



City of Houston



Houston-Hobby

## (1)



## Exceptional Warmth

December 2021 was the warmest December on record for Houston-Hobby, City of Houston, and City of Galveston beating the previous warmest December by $+5.0^{\circ} \mathrm{F},+3.4^{\circ} \mathrm{F}$, and $3.5^{\circ} \mathrm{F}$, respectively. The City of College Station was the second warmest December on record missing the number one spot by $0.1^{\circ} \mathrm{F}$.

This past December was closer climatologically to April than our normal December weather.

Galveston in particular had an exceptionally warm month with 30 new daily record high maximum or high minimum temperatures. Before this past December, Galveston only reached 80 degrees four times in its recorded climatology during the month of December. This year alone it reached $\mathbf{8 0}$ degrees nine times.

Houston, Galveston, and Houston-Hobby all saw their all-time December high temperatures this month.

| City of Galveston |  |  |
| :---: | :---: | :---: |
| 1 | 69.9 | 2021 |
| 2 | 66.4 | 1889 |
| 3 | 65.6 | 1933 |
| 4 | 62.9 | 2016 |
| 5 | 62.4 | 1984 |
| City of College Station |  |  |
| 1 | 66.6 | 1889 |
| 2 | 66.5 | 2021 |
| 3 | 60.7 | 1984 |
| 4 | 60.1 | 1933 |
| 5 | 58.7 | 1906 |

## Exceptional Warmth

## December 2021

$\underset{\text { sinn }}{\text { Obser }}$
December 2021

|  |  |  | $+6.0{ }^{\circ}$ | +7.7. ${ }^{\circ}$ | +15.4. ${ }^{\circ}$ | +14.1 ${ }^{\circ}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| +13.3 ${ }^{\circ}$ | +13.00 | $+2.7{ }^{\circ}{ }^{\circ}$ | $+{ }_{56}{ }^{6.9} 9^{\circ}$ | $+18.6^{\circ}$ | +24.2 | +6.9 $9^{\circ}$ |
|  |  | ${ }^{+19.950}$ | $+21.1^{10}$ | +21.7. | +21.4 ${ }^{\circ}$ |  |
|  | $-3.7{ }^{\text {ct }}$ |  | $+2.1{ }^{\text {s. }}$ | +9.750 | +16.8 | +17.4 ${ }^{\circ}$ |
| $+21.0^{\circ}$ | +20.6 | +22.7 | $+21.8^{\circ}$ | +17.9 $9^{\circ}$ | +22.9 |  |

Observed Average Temperature Departure from Normal ( ${ }^{\circ} \mathrm{F}$ )


## Exceptional Warmth

## December 2021

Observed Average Temperature Departure from Normal ( ${ }^{\circ} \mathrm{F}$ )

|  |  |  | $+7.6^{\circ}$ | $+9.3^{\circ}$ | $+15.1^{\circ}$ | $+18.8^{\circ}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $+19.5$ | $+6.2^{\circ}$ | $+2.5^{5} 5^{\circ}$ | $+11.2^{\circ}$ | +18.4 ${ }^{\circ}$ | $+25.1^{\circ}$ | $+{ }_{53} 8^{58} 8^{\circ}$ |
|  | $+2_{53.4}^{56.0}{ }^{\circ}$ | $+{ }_{\text {532 }}^{18.3}{ }^{\circ}$ | +24.0 | $+24.2^{\circ}$ | $+21.3^{\circ}$ | $+8.0^{\circ}$ |
| $-2.9{ }^{4.5}$ |  |  | $+7.5^{\circ}$ | $+14.6^{\circ}$ | $+17.7^{\circ}$ | $+17.3^{\circ}$ |
| $+20.4$ | $+23.5^{\circ}$ | +21.1 $1^{\circ}$ | $+22.2{ }^{\circ}$ | $+18 .{ }_{513}^{69 .}$ | $+22.3{ }^{\circ}$ |  |

December 2021
Observed Average Temperature Departure from Normal ( ${ }^{\circ}{ }^{\circ}$ )


## Daily Record Reports



## Daily Record Reports

There were 74 daily records set during the month of December.

| Site | Date | Record Type | New Record | Previous Record |
| :---: | :---: | :---: | :---: | :---: |
| City of Houston | December 9th | High Maximum Temp | $85^{\circ}$ | $84^{\circ}$ in 2019 |
| City of Houston | December $10^{\text {th }}$ | High Minimum Temp | $76^{\circ}$ | $67^{\circ}$ in 1983 |
| City of Houston | December $10^{\text {th }}$ | High Maximum Temp | $85^{\circ}$ | $83^{\circ}$ in 1939 |
| City of Houston | December $15^{\text {th }}$ | High Minimum Temp | $71^{\circ}-\mathrm{T}^{\circ}$ | $71^{\circ}$ in 1948 |
| City of Houston | December $16^{\text {th }}$ | High Minimum Temp | $71^{\circ}$ | $69^{\circ}$ in 1933 |
| City of Houston | December $16^{\text {th }}$ | High Maximum Temp | $83^{\circ}$ | $83^{\circ}$ in 1971 |
| City of Houston | December $17^{\text {th }}$ | High Maximum Temp | $82^{\circ}$ | $81^{\circ}$ in 2016 |
| City of Houston | December $27^{\text {th }}$ | High Minimum Temp | $68^{\circ}$ | $67^{\circ}$ in 2016 |
| City of Houston | December $28^{\text {th }}$ | High Maximum Temp | $82^{\circ}-\mathrm{T}$ | $82^{\circ}$ in 2016 |
| City of Houston | December $28^{\text {th }}$ | High Minimum Temp | $71^{\circ}$ | $70^{\circ}$ in 2016 |

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| Site | Date | Record Type | New Record | Previous Record |
| :---: | :---: | :---: | :---: | :---: |
| City of Galveston | December $30^{\text {th }}$ | High Maximum Temp | $80^{\circ}$ | $75^{\circ}$ in 2020 |
| City of Galveston | December $30^{\text {th }}$ | High Minimum Temp | $68^{\circ}$ | $67^{\circ}$ in 1984 |
| City of Galveston | December 31 ${ }^{\text {st }}$ | High Maximum Temp | $80^{\circ}$ | $74^{\circ}$ in 1921 |
| City of Galveston | December 31 $1^{\text {st }}$ | High Minimum Temp | $72^{\circ}$ | $66^{\circ}$ in 1875 |

## Drought Monitor As of December 28 ${ }^{\text {th }}$

## Houston/Galveston, TX WFO

via https://droughtmonitor.unl.edu/

Hot and dry conditions led to the expansion of DO-Abnormally Dry conditions across most of the area by the end of the month. D1-Moderate Drought persists across the northern portions of Houston, Trinity, and Polk counties.

## January Outlook

| Location | Average <br> Temp( $\left.{ }^{\circ} \mathrm{F}\right)$ | Normal <br> High $\left({ }^{\circ} \mathrm{F}\right)$ | Normal Low <br> $\left({ }^{\circ} \mathrm{F}\right)$ |
| :---: | :---: | :---: | :---: |
| Galveston | 56.0 | 63.2 | 48.9 |
| Houston Hobby | 55.0 | 63.8 | 46.1 |
| City of Houston | 53.8 | 63.8 | 43.7 |
| College Station | 51.5 | 61.7 | 41.3 |


| Location | Normal Monthly Precipitation <br> (in.) |
| :---: | :---: |
| Galveston | 4.30 |
| Houston Hobby | 4.09 |
| City of Houston | 3.76 |
| College Station | 3.43 |



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

- La Niña conditions are expected to continue with $95 \%$ chance through the Winter, and then 60\% chance of ENSO-Neutral by Spring.

Sea Surface Temperature Anomalies ( ${ }^{\circ} \mathrm{C}$ ) in the Tropical Pacific



El Nifino or La Nif̄a Watch: Issued when conditions are favorable for the development of El Nifio or La Nifia conditions within the next six months.

El Niño or La Niña Advisory: Issued when El Niño or La Nifiaa 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).

## 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)

Houston Hobby (HOU)
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, Records are based upon observations beginning in August 1931. 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 .

