



NWS Houston, Texas October 2017 Regional Climate Summary

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. . . Little relief from the heat throughout the month of October . . .

Overall, the month of October brought record breaking warmth across much of Southeast Texas. High temperatures approached records, breaking multiple high max record temperatures across Galveston, Houston Hobby, and the City of Houston. A few cold fronts brought relief from the heat, which moved through the region both in the second and last weeks of the month.

Additionally, below normal rainfall occurred across Southeast Texas. Although, these dry conditions did not result in much drought across the region, due to lingering soil moisture from Tropical Storm Harvey in August. Even throughout the month, annual rainfall amounts were still above the annual normal rainfall for many of the major climate and the COOP sites.

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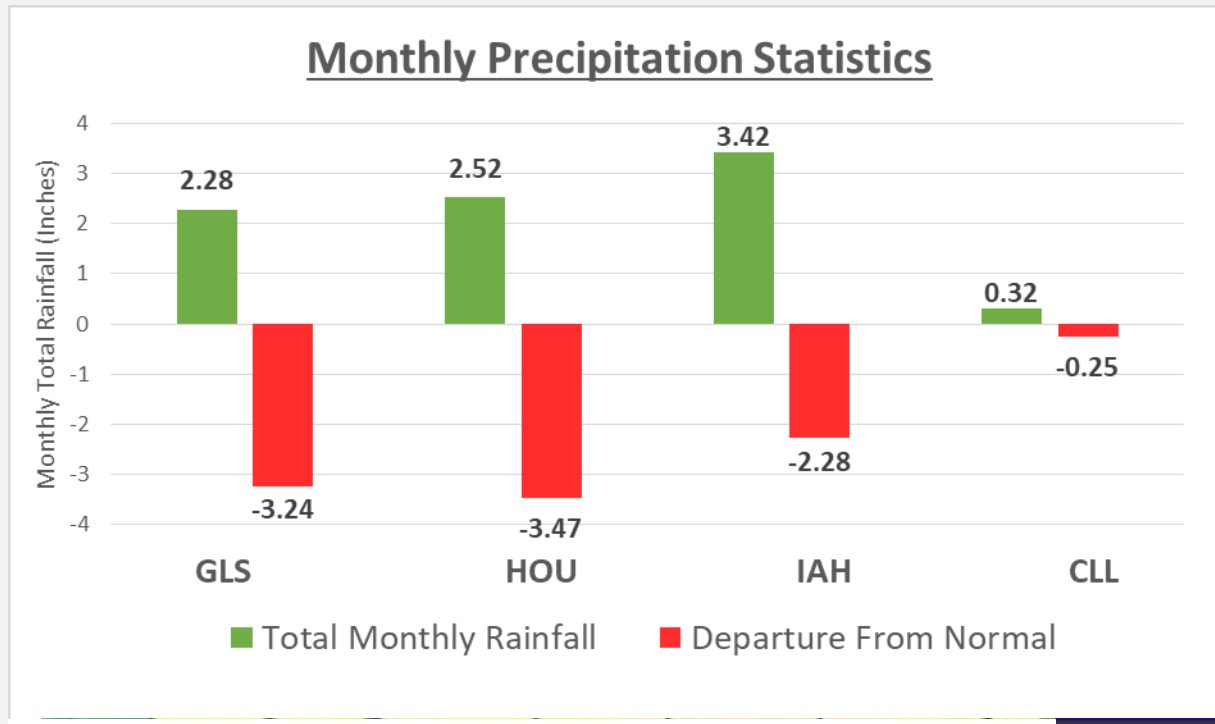
Precipitation

October was yet again another month with below normal rainfall across all four primary SE TX climate sites. Most of the monthly rainfall totals were captured in just a few days total in comparison to spread throughout the month. Regardless, most climate sites including ASOS and CO-OP locations are still significantly above normal in terms of annual rainfall accumulation. The best chance for precipitation was associated with a passing cold front, specifically in the last week of the month.

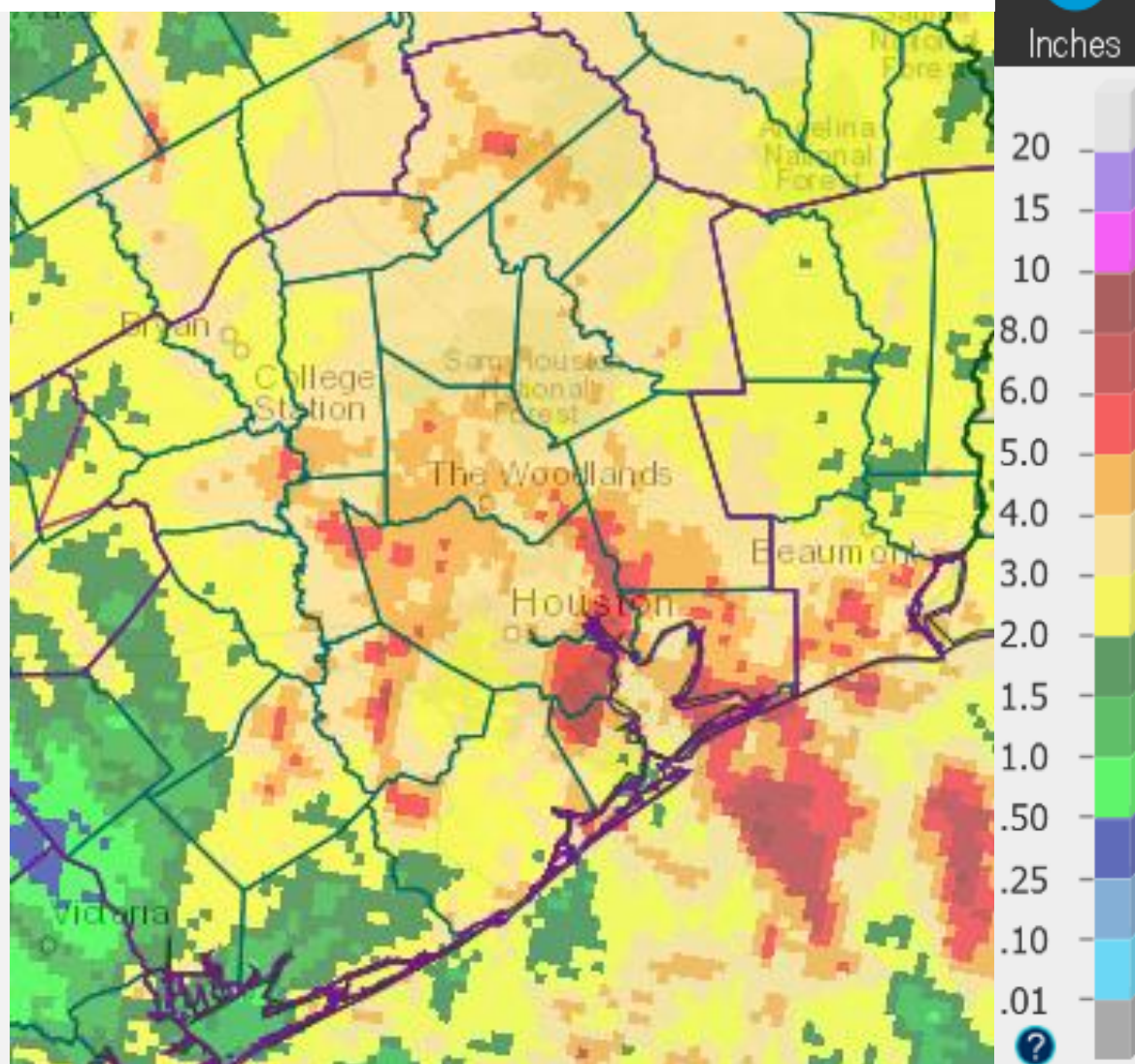
Site	Total Precipitation (in.)	Departure from Normal (in.)	Number of Thunderstorm Days	Maximum Daily Precipitation (in./date)	
Galveston (GLS)	2.28	-3.24	5	0.54	31st
Houston Hobby (HOU)	2.52	-3.47	6	0.74	20th
City of Houston (IAH)	3.42	-2.28	4	2.13	3rd
College Station (CLL)	2.94	-1.97	3	1.46	22nd



Precipitation (Continued)



October 2017 Monthly Observed Precipitation



Temperatures

Remarkably, there were two record low minimum temperature records broken in October! Each occurred on the 29th after a strong cold front moved through the area: Hobby Airport recorded 39 degrees which broke the previous record low of 42 set back in 1952; and the city of Houston when Intercontinental Airport recorded 35 degrees which broke the previous record low set back in 1910. All remaining records broken or tied were related to record warmth, including seven record high maximum and two record high minimum temperature records broken or tied at Galveston.

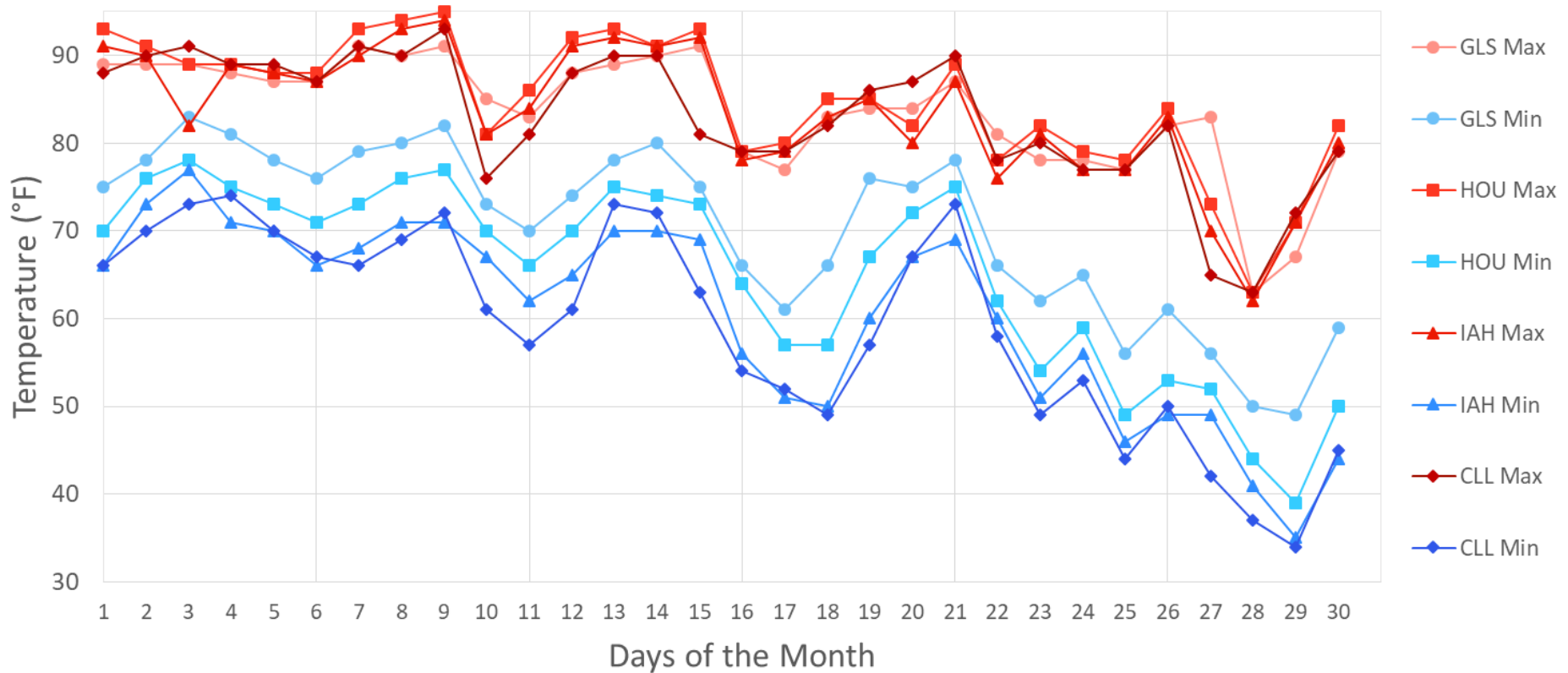
Site	Average Temp (°F)	Average High Temp (°F)	Average Low Temp (°F)	Departure From Normal (°F)	Maximum Temperature (°F)	Minimum Temperature (°F)
Galveston (GLS)	76.8	83.4	70.3	+2.5	91	49
Houston Hobby (HOU)	74.9	84.8	65.0	+2.8	95	39
City of Houston (IAH)	72.0	83.4	60.7	+0.5	94	35
College Station (CLL)	70.8	82.5	59.2	0.0	93	34



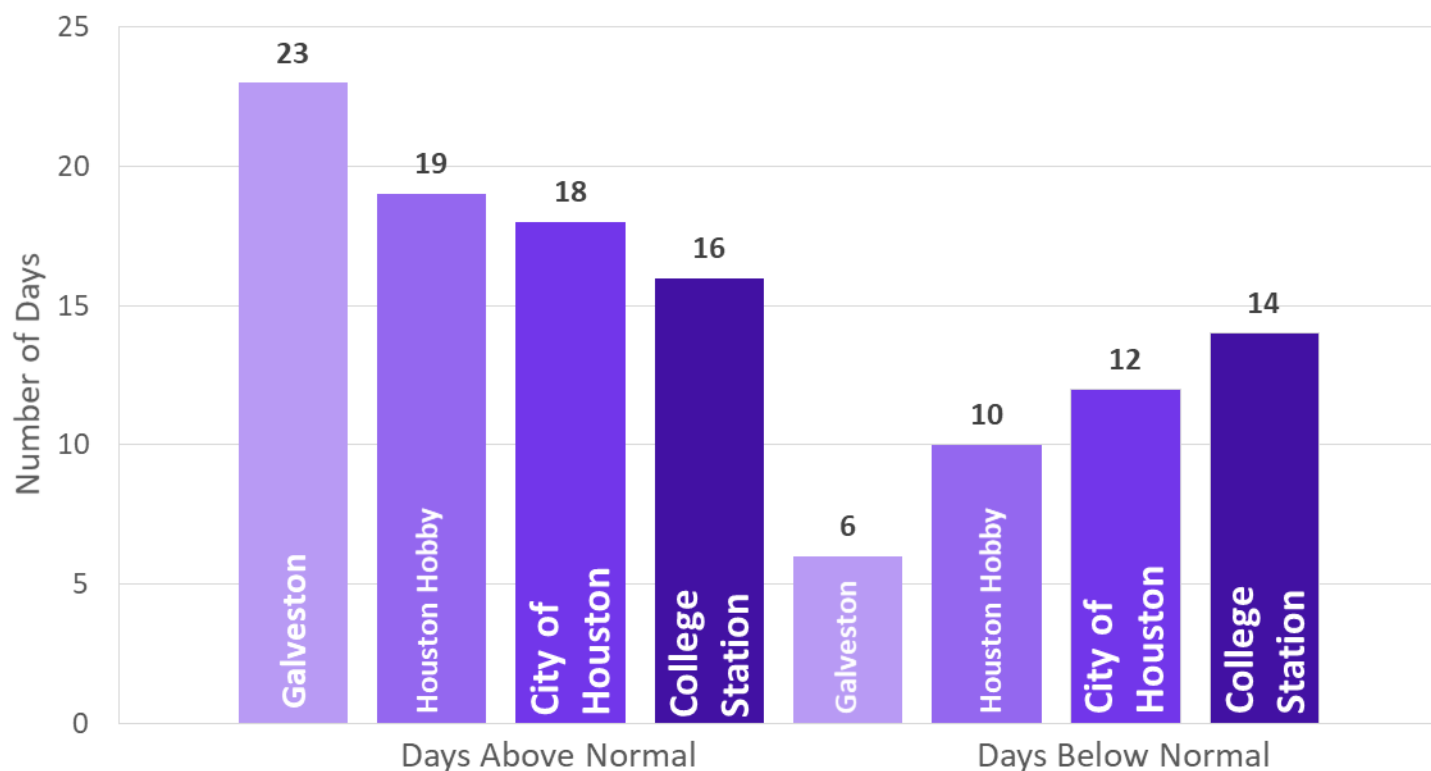
Temperatures (Continued)

Below is a line graph of temperature trends for the four primary climate sites, as well as a bar graph comparing above and below normal temperature days throughout the month of October.

October Temperature Trends



Mean Departure from Normal Distribution



SE TX Climate Sites Data

The following table lists the preliminary monthly temperature and rainfall data for climate sites across Southeast Texas in addition to the COOP site at the League City National Weather Service office.

October 2017 Data

Site	AVE High	AVE Low	Monthly Daily	AVE DEP	Monthly Rain	Monthly DEP	Year-to-Date Rain	Year-to-Date Dep
IAH	83.4	60.7	72.0	+0.5	3.42	-2.28	75.47	+33.78
GLS	83.4	70.3	76.8	+2.5	2.28	-3.24	53.05	+10.32
CLL	82.5	59.2	70.8	0.0	2.94	-1.97	48.08	+14.47
HOU	84.8	65.0	74.9	+2.8	2.52	-3.47	73.39	+27.09
CXO	82.1	54.9	68.5	-0.3	3.63	-1.57	54.50	+15.29
UTS	81.7	57.5	69.6	0.0	3.13	-1.67	52.36	+14.51
DWH	83.1	58.9	71.0	+0.9	3.84	-1.46	66.64	+24.68
SGR	84.7	60.7	72.7	+1.9	1.96	-3.27	69.34	+28.05
LBX	84.6	60.6	72.6	+1.8	1.98	-3.32	43.76*	+1.20*
PSX	82.9	59.1	71.0	-1.5	0.40	-4.58	35.81	-2.04
LVJ	84.7	63.9	74.3	+2.9	3.16	-2.30	72.38	+28.56
HGX	82.7	62.4	72.6	+2.8	4.37	-1.56	80.70	+32.84

* Note: Year-to-Date rainfall data for the Angleton/Lake Jackson Airport is affected by missing data from September 1st through the 13th due to the power source to the sensor being off because of flooding.

These climate sites all report hourly data besides the COOP site at the League City National Weather Service site HGX.

SE TX Climate Sites Extreme Data

Here are the details of the daily extreme temperature and rainfall data for October 2017 at the first- and second-order sites (the major climate sites), including the COOP site at the National Weather Service Office in League City:

- Warmest daily maximum temperature... 96 at SGR on the 9th
- Coldest daily minimum temperature..... 29 at CXO on the 29th
- Warmest daily average temperature.... 87 at GLS on the 9th
- Coolest daily average temperature..... 47 at CXO on the 28th
- Highest daily rainfall..... 3.20 at HGX on the 20th

The following table lists individual site temperature and rainfall extremes for the month measured at area airports.

October 2017 Extreme Data

Site	Daily Max		Daily Min		Daily Average Temp				Max RNFALL	
	TMP	Dates	TMP	Dates	Max Dates		Min Dates		PCPN	Dates
IAH	94	9th	35	29th	83	9th	52	28th	2.13	3rd
GLS	91	15th *	49	29th	87	9th	57	28th	0.54	31st
CLL	93	9th	34	29th	83	9th	50	28th	1.46	22nd
HOU	95	9th	39	29th	86	9th	54	28th	0.74	20th
CXO	93	9th	29	29th	80	21st	47	28th	1.79	31st
UTS	92	9th	33	29th	83	9th	48	28th	1.29	31st
DWH	94	9th	34	29th	81	13th *	50	28th	2.38	31st
SGR	96	9th	35	29th	84	3rd	51	28th	0.79	22nd
LBX	95	8th	33	29th	84	8th	51	28th	1.07	22nd
PSX	92	15th	78	9th	84	9th	50	28th	0.14	31st *
LVJ	95	9th	38	29th	85	8th *	53	28th	1.82	20th
HGX	93	8th	37	29th	84	8th	51	28th	3.20	20th

* Note: The last date of occurrence is noted in the table.

CO-OP Observer Sites – p. 1 of 2

The following table lists the rainfall data from the volunteer network of COOP observers. Note that some of these numbers are incomplete and may be updated at a later date. Year-to-date totals reflect any updates to previous months during the year.

COOP Rainfall Observations for October 2017

Location	Monthly		Year-to-Date	
	Rain	Dep	Rain	Dep
Anahuac	4.62	-0.44	40.78	-7.58 #
Angleton 2 W	*	*	29.64	-5.23 #
Bay City Water Works	*	*	40.65	+4.66
Baytown	4.05	-2.15	96.83	+46.75
Bellville 6 NNE	1.53	-2.33	49.14	+14.79
Brenham	1.25	-3.84	45.75	+8.31
Caldwell	1.20	-3.86	45.88	+13.05
Cleveland	*	*	70.52	+37.22
Columbus	1.70	-2.98	54.66	+18.31
Conroe COOP	1.82	-3.91	68.40	+28.56
Crockett	3.26	-1.50	48.12	+11.03
Cypress	2.99	-2.08	64.75	+26.27
Danevang 1 W	0.63	-4.13	41.06	+1.84
Eagle Lake Research Center	1.05	N/A	48.98	N/A
El Campo	0.86	N/A	52.38	N/A
Freeport 2 NW	2.34	-2.47	49.99	+1.84
Houston-North Houston	*	*	70.53	+31.90
Houston Westbury	1.54	-3.62	73.81	+30.71
Huntsville COOP	1.83	-2.85	62.97	+23.22
Katy Wolf Hill	1.19	-3.63	70.06	+33.16
Lake Livingston	0.54	N/A	42.79	N/A #
Liberty	*	*	83.26	+39.02
Livingston 2 NNE	*	*	28.18	-4.59 #
Madisonville	2.42	+2.42	42.49	+5.67

CO-OP Observer Sites – p. 2 of 2

Matagorda No 2	1.65	-2.73	25.18	-12.99 #
Montgomery	1.43	-4.06	58.70	+21.16
New Caney 2 E	3.66	-2.25	56.04	+12.05 #
Richmond	3.11	-2.20	72.86	+32.64
Somerville Dam	1.79	-2.68	41.83	+9.80 #
South Madisonville	*	N/A	36.26	N/A #
Thompsons 3 WSW	2.15	-2.89	53.41	+13.53
Washington State Park	1.86	-2.77	53.68	+19.18
West Columbia 1 ESE	2.80	N/A	57.47	N/A
Wharton	1.25	-3.90	54.28	+15.18

Notes:

* Current monthly data is unavailable for these sites. The year-to-date data for these stations have been updated through the end of the previous month of reported rainfall.

The "Year-to-Date" rainfall data for these sites was impacted by incomplete August rainfall data due to flooding from Tropical Storm Harvey.

Monthly Record Temperature and Rainfall Data

There were only a total of 17 new records made throughout the month of October across SE TX primary climate sites.

Site	Date	Record Type	New Record	Previous Record
CLL	None			
GLS	Oct 3 rd	High Min Temp	83	82 in 1990
	Oct 7 th	High Max Temp	91	Tied 1900
	Oct 8 th	High Max Temp	90	89 in 1892
	Oct 9 th	High Min Temp	82	80 in 1982
	Oct 9 th	High Max Temp	91	89 in 2007
	Oct 12 th	High Max Temp	88	87 in 2015
	Oct 14 th	High Max Temp	90	89 in 2015
	Oct 15 th	High Max Temp	91	88 in 2007
	Oct 21 st	High Max Temp	87	Tied 1927
HOU	Oct 3 rd	High Min Temp	78	Tied 2005
	Oct 9 th	High Min Temp	77	75 in 2007
	Oct 9 th	High Max Temp	95	93 in 1962
	Oct 15 th	High Max Temp	93	92 in 2015
	Oct 29 th	High Min Temp	39	42 in 1952
IAH	Oct 9 th	High Max Temp	94	93 in 2007
	Oct 15 th	High Max Temp	92	Tied 2015
	Oct 29 th	Low Min Temp	35	39 in 1910

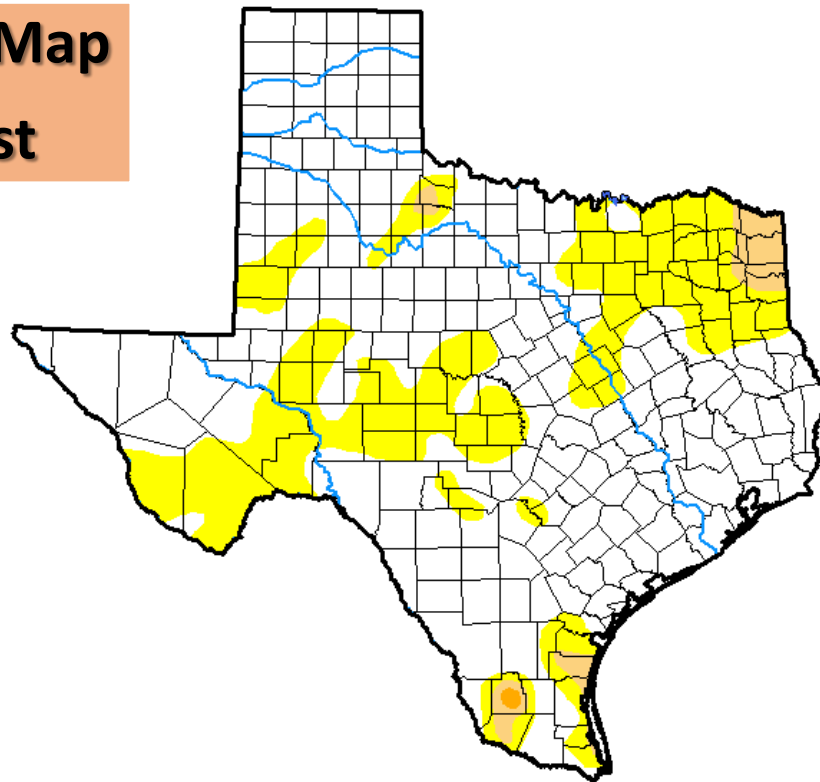


Drought Conditions

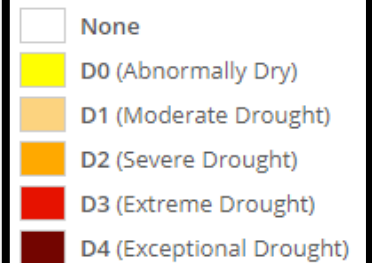
Although rainfall was below normal across all of Southeast Texas during the month of October, very little impacts were noted. The following table lists the abnormal dry or drought conditions by county as noted by the U.S. Drought Monitor.

For the week ending on:	Intensity and Impacts	Impacting the following Counties
October 3 rd	No Drought Conditions	None
October 10 th	No Drought Conditions	None
October 17 th	D-0	Houston
October 24 th	No Drought Conditions	None
October 31 st	No Drought Conditions	None

Most Recent Drought Map Posted: October 31st



Intensity:



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



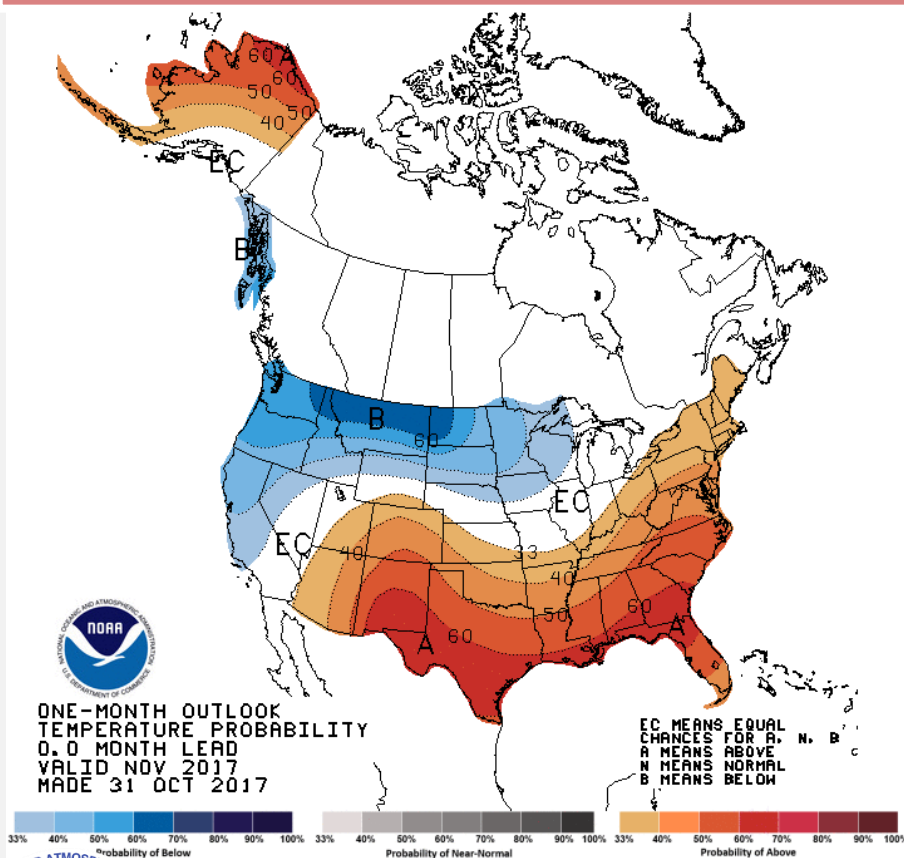
November Outlook

The latest outlook from the Climate Prediction Center (CPC) calls for an increased likelihood of above normal temperatures and below normal precipitation for the month of November.

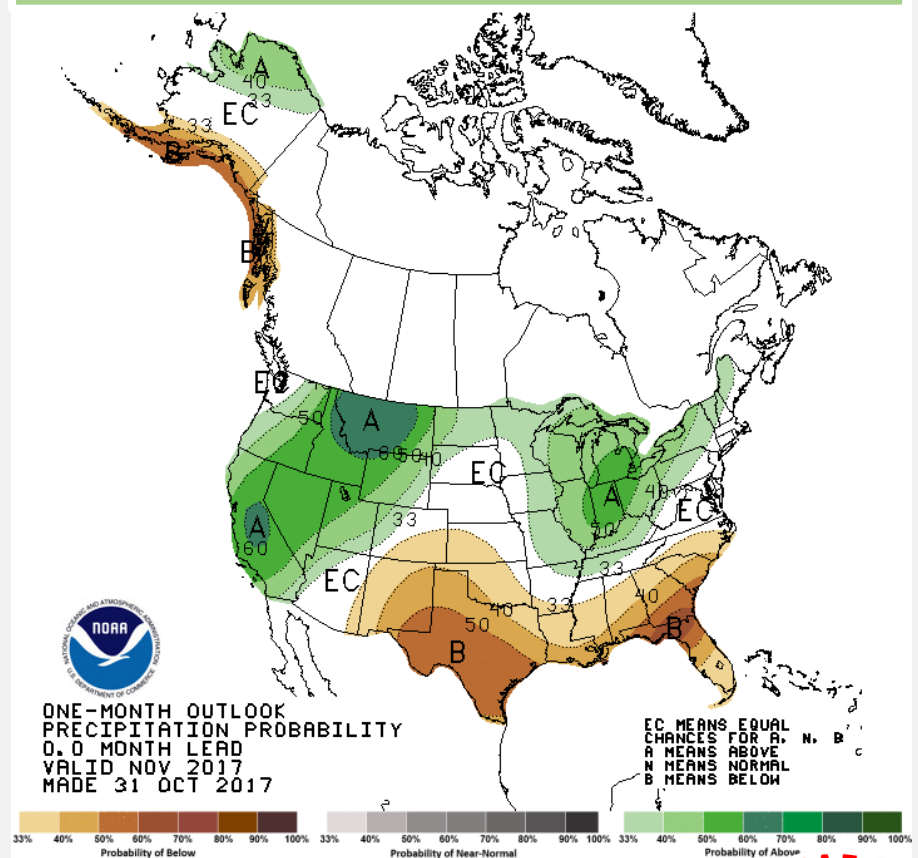
Site	Average Temp(°F)	Normal High (°F)	Normal Low (°F)
Galveston	69.2	75.7	62.7
Houston Hobby	67.1	76.4	57.8
City of Houston	66.4	76.8	56.0
College Station	65.3	75.6	55.1

Site	Normal Monthly Precipitation (in.)
Galveston (GLS)	0.70
Houston Hobby (HOU)	0.76
City of Houston (IAH)	0.76
College Station (CLL)	0.57

Upcoming Temperature Outlook



Upcoming Precipitation Outlook



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 Sante 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.

