



# LOCAL CLIMATOLOGICAL DATA ANNUAL SUMMARY WITH COMPARATIVE DATA

## HOUSTON, TEXAS

1971

U.S. DEPARTMENT OF COMMERCE

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
ENVIRONMENTAL DATA SERVICE

### NARRATIVE CLIMATOLOGICAL SUMMARY

Houston, the largest city in Texas, is located in the flat Coastal Plains, about 50 miles from the Gulf of Mexico and about 25 miles from Galveston Bay. The climate is predominantly marine. The terrain includes numerous small streams and bayous which, together with the nearness to Galveston Bay, favor the development of both ground and advective fogs. Prevailing winds are from the southeast and south, except in January, when frequent passages of high pressure areas bring invasions of polar air and prevailing northerly winds.

Temperatures are moderated by the influence of winds from the Gulf, which results in mild winters and, on the whole, relatively cool summer nights. Another effect of the nearness of the Gulf is abundant rainfall, except for rare extended dry periods. Polar air penetrates the area frequently enough to provide stimulating variability in the weather.

The average number of days with minimum temperatures of 32° or lower is only about 7 per year at the city office, and about 15 at William P. Hobby Airport, which is located in southeast Houston. Most freezing temperatures last only a few hours since they are usually accompanied by clear skies. The extreme persistence of freezing temperatures was in January - February 1951, when the temperature remained 32° or below for 123 consecutive hours.

Monthly rainfall is evenly distributed throughout the year. Annual downtown rainfall has varied from 72.86 inches in 1900 to 17.66 inches in 1917. About 75 percent of the years have total precipitation between 30 and 60 inches. Monthly precipitation at the city office has ranged from

17.64 inches to only a trace. Since thunderstorms are the main source of rainfall, precipitation may vary substantially in different sections of the City on a day-to-day basis.

Records of sky cover for daylight hours indicate about one-fourth of the days per year as clear with a maximum of clear days in October. Cloudy days are relatively frequent from November to May and partly cloudy days are the more frequent for June through September. Sunshine averaged near 60 percent of the possible amount for the year at the Federal Building for 1938-1960, ranging from 46 percent for the winter months to 69 percent for the summer. Data from the airport locations since 1961 indicate slightly higher percentages of sunshine. Snow rarely occurs; however, on February 14-15, 1895, 20.0 inches of unmelted snow was measured, but 24-hour amounts were not reported.

Heavy fog occurs on an average of 16 days a year and light fog occurs about 62 days a year in the City, but the frequency of heavy fog is considerably higher at William P. Hobby Airport.

Destructive windstorms are fairly infrequent, but both thundersqualls and tropical storms occasionally pass through the area.

At the city office, the average date of the last temperature 32° or lower in spring is February 5. The average date of the first 32° temperature in fall is December 11. The average period from the last 32° temperature in spring to the first in fall is 309 days. The latest date of 32° temperature in spring is March 27, 1955, and the earliest date in fall is October 25, 1892.

# METEOROLOGICAL DATA FOR THE CURRENT YEAR

Station: HOUSTON, TEXAS

INTERCONTINENTAL AIRPORT

Standard time used: CENTRAL

Latitude: 29° 59' N

Longitude: 95° 22' W

Elevation (ground): 96 feet

Year: 1971

Month	Temperature						(Base 65°)	Precipitation						Relative humidity						Wind & $\delta$						Number of days																
	Averages			Extremes				Total			Greatest in 24 hrs.			Snow, Ice pellets			Resultant		Fastest mile		Sunrise to sunset		Precipitation		Temperatures		Maximum		Minimum													
	Daily maximum	Daily minimum	Monthly	Highest	Lowest	Date		Heating	Cooling	Total	Greatest in 24 hrs.	Date	Total	(Local time)	Hour	Hour	Hour	Hour	Direction	Speed	Direction	Speed	Percent of possible sunshine	Average sky cover	Cloudy	Cloudy	Cloudy	Cloudy	Maximum	Minimum												
JAN	67.9	49.4	56.7	82	30 <sup>+</sup>	28	84	298	48	0.36	0.25	T	6-7	86	87	62	68	13	1.3	8.6	22	21+*	55	6.7	13	13	7	0	0	0												
FEB	68.1	49.2	55.7	80	26 <sup>+</sup>	25	10 <sup>+</sup>	273	18	2.11	1.30	25-26		77	80	53	53	13	2.0	9.7	29	30	21	58	5.4	11	11	4	5	5	0	0	0									
MAR	72.2	46.6	59.4	88	22	25	4	219	55	1.21	0.51	18		77	80	53	53	13	2.2	9.2	28	33	3	55	5.8	8	8	5	0	0	0	0	0									
APR	78.5	54.7	66.6	86	26	32	7	72	126	2.14	2.08	16-17		84	87	53	56	13	3.9	8.8	29	30	16	57	6.1	14	14	5	5	5	0	0	0	0	0							
MAY	83.8	64.4	74.1	90	28	47	14	3	292	3.41	1.90	10-11		87	90	59	63	14	5.0	8.3	21	31	11+	51	6.6	15	15	1	1	1	0	0	0	0	0							
JUN	91.0	69.5	80.3	97	15	63	6*	0	466	2.42	1.02	15-16		88	92	57	61	15	5.2	7.2	21	19	26	65	6.5	6	6	0	0	0	0	0	0	0	0							
JUL	95.8	71.9	83.9	100	7	67	13	0	594	1.42	0.60	30		84	91	51	55	18	4.3	7.1	23	19	27	74	6.0	5	5	0	0	0	0	0	0	0	0							
AUG	89.8	71.0	80.4	94	23	67	18	0	485	6.95	2.59	2-3		92	93	62	70	11	1.3	4.1	20	20	4	56	5.4	13	13	2	2	2	0	0	0	0	0	0						
SEP	86.7	69.9	78.3	97	6	57	20	2	409	5.17	2.21	9-10		93	95	69	77	07	4.7	6.7	25	19	3	50	7.2	12	12	1	1	1	0	0	0	0	0	0						
OCT	82.1	61.8	72.0	89	2	45	11	6	229	3.49	2.22	4-5		94	95	64	79	09	2.2	5.4	21	17	2	55	3.5	11	11	0	0	0	0	0	0	0	0	0						
NOV	72.4	47.6	60.0	86	2	35	25	195	52	1.82	0.89	17-18		88	89	59	72	08	2.8	6.9	23	25	28+	58	5.3	10	9	1	1	1	0	0	0	0	0	0						
DEC	68.4	51.4	59.9	82	16	38	7	194	44	7.33	3.43	1-2		88	92	73	80	10	1.9	7.5	28	28	10	27	8.0	4	3	2	0	0	0	0	0	0	0	0						
YEAR	79.7	58.2	68.9	100	7	25	4*	1262	2818	37.83	3.43	1-2		JUL.	MAR.	DEC.	T	JAN.	6-7	87	89	60	66	12	2.6	7.5	29	30	16+	56	6.3	84	114	167	87	0	64	49	83	0	19	0

## NORMALS, MEANS, AND EXTREMES

Month	Temperature $\theta$						(Base 65°)	Precipitation $\theta$						Relative humidity						Wind & $\delta$						Mean number of days														
	Normal			Extremes				Normal heating degree days (Base 65°)			Year			Snow, Ice pellets			Resultant		Fastest mile		Sunrise to sunset		Precipitation		Mean number of days		Temperatures		Max.		Min.									
	Daily maximum	Daily minimum	Monthly	Record highest	Year*	Record lowest		Normal total	Maximum monthly	Year	Minimum monthly	Year	Maximum in 24 hrs.	Year	Mean total	Maximum monthly	Year	Maximum in 24 hrs.	Year	Mean speed	Pervailing direction	Speed	Direction	Year	Percent of possible sunshine	Sunrise to sunset	Cloudy	Cloudy	Cloudy	Cloudy	Max.	Min.								
(a)	(b)	(b)	(b)	2	2	2	(b)	(b)	2	2	2	2	37	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2							
J	63.1	39.5	51.3	82	1971	19	1970	453	3.93	1.93	1970	0.36	1971	0.85	1970	0.2	T	1971+	86	88	64	69	7.9	NNW	24	35	1970	45	7.1	6	7	18	7	0	1	6	0	0		
F	65.2	42.4	53.8	80	1971	25	1971	333	3.65	2.82	1970	1.21	1971	1.30	1971	0.2	0		80	82	56	57	7.9	SSE	29	36	1971	54	5.9	8	7	13	8	0	4	3	0	0	0	
M	71.0	47.7	59.8	88	1971	25	1971	223	2.80	5.08	1970	1.21	1971	1.87	1970	0.0	0		82	85	58	60	8.9	SSE	28	33	1971	52	6.3	9	6	16	10	0	5	5	0	0	0	
A	78.5	56.4	67.5	88	1970	32	1971	45	3.34	2.21	1970	2.14	1971	2.08	1971	0.0	0		87	89	58	61	8.9	SSE	29	30	1971	56	6.7	7	6	17	6	0	2	4	0	0	0	
M	86.6	63.8	75.2	90	1971	46	1970	0	4.28	14.39	1970	3.41	1971	4.69	1970	0.0	0		88	94	62	65	8.1	SSE	23	14	1970	54	6.7	6	6	17	9	0	10	3	1	0		
J	92.3	69.6	81.0	99	1969	52	1970	0	3.54	2.42	1971	0.26	1970	1.28	1969	0.0	0		89	92	57	61	6.6	SSE	21	19	1971+	70	6.2	7	13	10	6	0	7	2	19	0		
J	93.5	71.2	82.4	101	1969	63	1970	0	4.03	3.89	1969	1.42	1971	1.03	1969	0.0	0		86	92	55	59	6.1	S	46	10	1969	74	6.2	7	13	11	0	11	0	26	0	0		
A	94.3	70.7	82.5	101	1969	62	1970	0	4.01	6.95	1971	2.03	1970	2.59	1971	0.0	0		90	93	59	65	4.6	SSE	28	36	1970	57	5.9	7	14	10	9	0	10	1	26	0	0	
S	90.5	66.0	78.3	93	1969	54	1970	0	4.05	6.22	1970	5.17	1971	2.53	1969	0.0	0		92	94	67	75	6.6	SSE	30	36	1970	58	7.0	3	12	13	10	0	9	2	12	0	0	
D	83.2	56.6	69.9	91	1969	39	1970	25	3.73	9.09	1970	3.20	1969	4.06	1970	0.0	0		93	94	61	77	5.7	SSE	26	31	1970	60	5.7	10	8	13	10	0	6	4	0	0	0	
N	71.3	46.3	58.8	88	1969	25	1970*	225	3.90	2.13	1969	1.54	1970	2.13	1969	0.0	0		87	88	56	72	6.9	SSE	23	25	1971	63	4.9	13	7	10	5	0	1	4	0	0	0	
D	65.1	41.6	53.4	82	1971+	29	1969	372	4.53	7.33	1971	0.64	1970	3.43	1971	T	0.0		85	89	68	76	7.4	SSE	26	30	1971+	37	7.3	6	4	21	9	0	2	10	0	0	0	
YR	79.6	56.0	67.8	101	1969+	19	1970*	1676	45.79	14.39	1970	0.26	1970	4.69	1970	0.4	T	1971+	87	90	60	66	7.2	SSE	46	10	1969	59	6.3	89	105	171	94	0	65	42	63	2	23	0
AUG.	79.6	56.0	67.8	101	1969+	19	1970*	1676	45.79	14.39	1970	0.26	1970	4.69	1970	0.4	T	1971+	87	90	60	66	7.2	SSE	46	10	1969	59	6.3	89	105	171	94	0	65	42	63	2	23</td	

## AVERAGE TEMPERATURE

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
1933	59.9	55.3	63.8	69.4	75.4	79.0	82.0	82.1	81.2	72.6	63.2	64.0	70.9
1934	55.8	54.3	59.6	69.5	75.9	81.4	82.4	77.3	73.4	63.8	56.4	69.2	
1935	57.0	56.0	67.4	69.4	73.7	79.8	82.5	83.0	76.8	72.5	60.6	53.0	69.4
1936	50.8	51.1	64.9	65.7	74.0	81.4	80.8	82.0	79.4	67.3	57.2	55.1	67.5
1937	56.6	56.4	56.6	65.5	74.3	81.4	82.6	83.2	78.0	68.4	56.3	54.1	67.8
1938	54.4	59.8	66.6	65.4	73.8	79.8	82.2	81.9	77.4	72.1	57.9	55.7	68.9
1939	55.8	55.9	63.4	67.6	75.6	80.6	82.4	82.1	79.5	71.2	57.6	56.6	69.0
#1940	62.1	52.9	61.4	66.3	72.8	78.6	81.7	81.8	76.0	70.0	60.6	57.4	66.8
1941	56.1	52.4	56.7	69.0	74.9	80.8	83.3	83.4	79.7	75.2	58.4	56.1	68.8
1942	50.1	53.0	56.6	67.1	74.9	81.2	81.4	76.4	76.2	71.2	63.5	55.8	68.0
1943	52.4	58.3	58.6	70.2	77.0	81.6	83.0	83.6	76.8	68.6	57.8	53.2	68.4
1944	52.3	61.4	61.7	69.5	73.3	82.0	84.4	83.8	79.4	69.9	61.8	52.2	69.3
1945	52.4	58.6	67.8	68.8	73.1	80.9	83.0	79.9	68.5	65.3	51.4	69.4	
1946	51.6	56.4	66.0	70.6	75.4	79.2	82.2	82.8	78.4	72.1	62.2	57.8	69.4
1947	52.2	48.8	50.6	69.4	75.4	81.6	82.4	82.6	80.0	75.0	59.0	55.8	68.1
1948	66.2	54.8	61.7	71.4	76.7	82.4	84.3	84.5	77.3	69.6	60.5	59.0	69.0
1949	52.5	59.0	62.5	66.1	78.0	82.6	83.2	82.0	80.0	71.9	62.8	58.2	69.9
1950	63.1	61.3	60.5	67.0	78.0	80.3	82.3	82.4	79.3	73.0	60.7	55.1	70.2
1951	53.8	55.2	62.9	67.0	75.0	82.1	84.3	85.8	79.6	72.4	58.2	58.1	69.5
1952	62.0	58.8	61.2	64.9	73.3	81.2	82.7	84.6	78.5	75.0	59.0	53.7	68.7
1953	56.6	55.8	68.5	68.7	76.7	83.9	84.1	82.1	79.4	71.5	60.0	51.4	69.9
1954	56.4	60.6	69.0	71.5	72.4	81.3	84.8	84.5	81.4	73.0	60.0	57.4	70.3
1955	54.1	56.1	64.7	71.2	77.0	79.4	83.1	82.8	80.3	70.7	61.5	56.2	69.8
1956	54.3	59.2	62.6	67.7	77.3	80.8	84.3	83.8	80.2	73.3	59.9	59.0	70.2
1957	57.9	62.9	61.2	68.6	76.5	80.5	85.4	83.8	76.9	67.9	61.3	57.3	70.0
1958	50.3	49.9	57.8	62.2	77.2	83.4	84.8	84.2	79.7	69.6	62.5	52.6	68.4
1959	50.3	56.3	60.3	66.7	76.9	82.3	82.3	82.3	80.1	72.2	55.8	55.0	68.4
#1960	51.8	49.7	57.4	69.8	73.9	82.4	84.7	82.4	79.5	73.2	64.3	52.8	68.5
1961	49.5	57.9	66.8	68.0	70.0	80.4	82.6	82.2	79.7	70.5	59.8	56.3	69.2
1962	49.3	63.9	58.9	68.1	75.7	79.8	84.1	85.9	81.3	74.6	60.1	54.8	69.7
1963	48.3	52.6	64.9	74.5	77.5	82.0	84.3	84.3	80.4	75.0	66.1	67.1	69.6
1964	51.6	49.4	60.4	70.2	75.8	80.4	83.7	84.4	79.3	67.8	65.0	55.9	68.7
1965	56.0	55.1	58.7	73.5	77.1	83.0	85.1	83.5	81.2	69.4	69.1	58.9	70.9
1966	48.4	52.8	61.5	70.6	75.9	80.0	84.3	82.4	79.4	69.7	64.7	54.2	68.7
1967	54.9	54.5	67.6	75.7	75.9	82.6	82.1	81.1	77.6	70.5	64.1	55.4	70.2
1968	52.7	50.4	59.0	70.1	76.3	80.5	82.5	84.0	78.0	73.5	59.7	55.7	68.7
#1969	56.7	56.9	56.1	70.3	75.4	80.0	84.4	83.2	78.2	71.0	58.5	55.2	68.8
1970	46.7	53.9	56.9	69.3	72.1	78.4	81.4	83.1	78.9	66.7	58.9	60.5	67.1
1971	56.7	55.7	59.4	66.6	74.1	80.3	83.9	80.4	78.3	72.0	60.0	59.9	68.9
RECORD MEAN	51.7	54.8	58.2	68.0	73.1	79.6	83.2	82.2	78.6	55.9	58.5	58.5	68.0
MAX	61.8	66.5	69.8	78.7	82.5	90.2	94.6	92.6	87.9	80.7	71.6	69.0	78.8
MIN	41.5	43.1	46.5	57.2	63.7	68.8	72.0	71.8	69.0	59.0	43.5	48.0	57.2

## TOTAL DEGREE DAYS

Season	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total	
1933-34	0	0	0	3	107	117	284	294	191	11	0	0	1007	
1934-35	0	0	0	0	106	290	272	233	56	28	2	0	1007	
1935-36	0	0	0	4	184	308	438	611	77	69	0	0	1551	
1936-37	0	0	0	39	233	306	294	269	263	105	0	0	1525	
1937-38	0	0	0	41	286	337	333	184	57	110	0	0	1350	
1938-39	0	0	0	17	293	286	256	116	56	36	0	0	1293	
1939-40	0	0	0	19	223	277	707	300	138	69	0	0	1813	
#1940-41	0	0	1	11	180	240	264	345	268	6	0	0	1315	
1941-42	0	0	0	21	212	274	456	332	201	43	0	0	1339	
1942-43	0	0	13	10	135	289	403	190	219	17	0	0	1276	
1943-44	0	0	0	41	227	377	400	154	141	26	4	0	1380	
1944-45	0	0	11	157	395	381	200	37	14	0	0	0	1235	
1945-46	0	0	0	46	93	418	390	243	89	4	0	0	1283	
1946-47	0	0	0	12	139	243	416	443	285	29	0	0	1567	
1947-48	0	0	0	204	232	387	301	188	111	0	0	0	1614	
1948-49	0	0	0	30	177	228	413	192	135	72	0	0	1247	
1949-50	0	0	0	33	114	233	149	139	179	45	0	0	892	
1950-51	0	0	0	0	193	321	355	299	136	59	0	0	1363	
1951-52	0	0	0	3	261	251	163	195	161	50	0	0	1084	
1952-53	0	0	0	58	233	352	263	203	28	33	2	0	1232	
1953-54	0	0	0	19	162	422	271	138	204	10	14	0	1242	
1954-55	0	0	0	36	151	260	347	259	162	15	0	0	1230	
1955-56	0	0	0	21	196	290	342	219	141	27	0	0	1236	
1956-57	0	0	0	0	204	220	256	129	138	45	3	0	995	
1957-58	0	0	0	71	185	245	449	417	234	30	0	0	1631	
1958-59	0	0	0	48	145	375	452	254	163	56	0	0	1495	
1959-60	0	0	0	7	309	306	416	441	260	8	1	0	1748	
#1960-61	0	0	0	17	104	390	473	227	56	61	0	0	1328	
1961-62	0	0	0	16	184	287	460	99	209	32	0	0	1307	
1962-63	0	0	0	8	157	313	515	351	88	7	0	0	1439	
1963-64	0	0	0	0	108	551	413	466	158	19	0	0	1695	
1964-65	0	0	0	31	114	315	300	284	250	0	0	0	1294	
1965-66	0	0	0	2	20	23	212	516	334	144	12	0	0	1263
1966-67	0	0	0	27	99	359	362	298	68	0	0	0	1193	
1967-68	0	0	0	18	99	312	390	415	229	17	0	0	1483	
#1968-69	0	0	0	5	199	297	284	234	281	1	0	0	1303	
1969-70	0	0	0	29	238	304	579	309	252	51	12	0	0	1774
1970-71	0	0	0	0	72	274	209	298	273	219	72	3	0	1420
1971-72	0	0	0	2	6	195	194	0	0	0	0	0	0	

## TOTAL SNOWFALL

Season	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total
1933	3.14	3.51	2.36	0.62	2.32	0.63	7.66	5.62	4.66	1.76	2.07	3.45	37.60
1934	9.80	3.30	5.86	1.33	0.08	2.45	1.04	4.01	0.29	5.37	3.77	39.98	
1935	2.02	4.03	2.43	3.63	3.89	2.74	2.58	0.38	6.62	1.46	9.59</td		

# STATION LOCATION

HOUSTON, TEXAS

Location	Occupied from	Occupied to	Airliner distance and direction from previous location	Latitude North	Longitude West	Elevation above Sea level										Remarks
						Ground					Sea level					
	Sea level	Wind instruments	Extreme thermometers	Psychrometer	Telopsychrometer	Tipping bucket rain gage	Weighing rain gage	8" rain gage	Hygrothermometer	Pyranometer						
Cotton station	7-14-61	9-15-09														Location of cotton station not available.
4th Floor, Stewart Bldg. Preston & Fannin Streets	9-16-09	12-13-09		25° 45.7'	95° 21.6'	51	122	111	111		104		104			
5th Floor, Stewart Bldg. Preston & Fannin Streets	12-14-09	2-28-26		29° 45.7'	95° 21.6'	51	122	111	111		104		104			
19th Floor, Shell Bldg. Texas & Fannin Streets	3- 1-26	12-22-32	1/8 mi. SW	29° 45.6'	95° 21.7'	52	314	293	293		287		287			
22nd Floor, Shell Bldg. Texas & Fannin Streets	12-23-32	6-21-35		29° 45.6'	95° 21.7'	52	314	293	293		287		287			
14th Floor, Shell Bldg. Texas & Fannin Streets	6-22-35	8-25-38		29° 45.6'	95° 21.7'	52	314	293	293		287		287			
10th Floor, Federal Bldg. Franklin & Fannin Sts.	8-26-38	8-31-67*	1/4 mi. NE	29° 45.8'	95° 21.6'	41	190	162	158		180		159			* - Temperature and precipitation data telemetered to office at airport after 3-31-61.
<b>COOPERATIVE</b>																
Harrisburg, Texas	11- 1-23	2-29-32		29° 42'	95° 17'	38		4					4			Suburb of the City of Houston.
<b>AIRPORT STATION</b>																
Houston Municipal Airport	7-16-30	8- 1-40		29° 39'	95° 17'	50	37	30	30				25			Known as Houston Municipal Airport until 4-13-55.
Houston International Airport	8- 1-40	7-29-60	1000 ft. S	29° 39'	95° 17'	50	87	28	28				21			Moved from third to ground floor of same building and hygrothermometer installed 1500 feet E of thermometer site.
Houston International Airport # + William P. Hobby Air- port effective 9-1-67	7-29-60	5-31-69		29° 39'	95° 17'	50	20	23	23		a23	22	4			a - Added 9-1-68.
Trailer, NW corner of Houston Intercontinental Airport	6- 1-69	Present	23 mi. NNW	29° 59'	95° 22'	96	20	5	5		c4	3	b4			b - Commissioned 11-14-69. c - Commissioned 1-1-70.

Requests for additional information should be directed to the National Weather Service Office for which this summary was issued.

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