

# Climatography of the United States

No. 20

1971-2000

Station: LAKE KEMP, TX

COOP ID: 414982

Climate Division: TX 2

NWS Call Sign:

Elevation: 1,167 Feet Lat: 33°45N

Lon: 99°09W

## Temperature (°F)

Mean (1)				Extremes										Degree Days (1) Base Temp 65		Mean Number of Days (3)					
Month	Daily Max	Daily Min	Mean	Highest Daily(2)	Year	Day	Highest Month(1) Mean	Year	Lowest Daily(2)	Year	Day	Lowest Month(1) Mean	Year	Heating	Cooling	Max >= 100	Max >= 90	Max >= 50	Max <= 32	Min <= 32	Min <= 0
Jan	51.7	28.1	39.9	83+	1986	21	47.1	1990	1	1963	19	27.7	1979	779	0	.0	.0	18.5	3.1	21.9	.0
Feb	57.5	32.9	45.2	92	1996	23	53.5	1976	-2	1985	2	31.6	1978	562	8	.0	@	20.4	1.8	12.9	@
Mar	66.6	40.8	53.7	96+	1989	13	59.4	1974	9	1980	2	48.7	1987	359	9	.0	.7	28.3	.2	4.9	.0
Apr	76.0	49.9	63.0	98+	1987	20	67.6	1972	28+	1997	12	57.0	1997	124	63	@	2.5	29.7	.0	.7	.0
May	84.2	59.3	71.8	113	2000	25	78.2	2000	33	1978	4	66.3	1976	27	236	1.1	8.2	31.0	.0	.0	.0
Jun	92.1	67.8	80.0	115+	1994	28	85.5	1980	50	1982	1	75.1	1983	1	449	4.0	20.1	30.0	.0	.0	.0
Jul	97.5	72.3	84.9	113+	1980	5	91.8	1980	58	1995	1	79.9	1976	0	616	12.3	28.3	31.0	.0	.0	.0
Aug	96.1	71.3	83.7	111	1964	6	90.1	2000	53	1966	24	78.2	1992	0	580	11.2	26.6	31.0	.0	.0	.0
Sep	87.8	63.8	75.8	110	2000	5	82.6	1998	36	1983	21	69.2	1974	9	333	2.6	15.3	30.0	.0	.0	.0
Oct	77.4	52.7	65.1	106	1977	1	68.8	1998	22	1993	31	56.9	1976	84	87	.2	3.0	30.6	.0	.3	.0
Nov	63.6	40.7	52.2	91	1965	25	60.0	1999	13	1986	13	45.3	1972	396	11	.0	.0	26.0	.1	6.9	.0
Dec	53.8	31.4	42.6	82	1995	3	48.4	1984	-6+	1989	24	31.2	1983	696	0	.0	.0	20.8	1.7	17.4	.1
Ann	75.4	50.9	63.2	115+	Jun 1994	28	91.8	Jul 1980	-6+	Dec 1989	24	27.7	Jan 1979	3037	2392	31.4	104.7	327.3	6.9	65.0	.1

+ Also occurred on an earlier date(s)

@ Denotes mean number of days greater than 0 but less than .05

Complete documentation available from: [www.ncdc.noaa.gov/oa/climate/normals/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normals/usnormals.html)

Issue Date: February 2004

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1962-2001

(3) Derived from 1971-2000 serially complete daily data

# Climatography of the United States

## No. 20 1971-2000

National Climatic Data Center  
Federal Building  
151 Patton Avenue  
Asheville, North Carolina 28801  
www.ncdc.noaa.gov

**Station: LAKE KEMP, TX**

**COOP ID: 414982**

**Climate Division: TX 2**

**NWS Call Sign:**

**Elevation: 1,167 Feet Lat: 33°45N**

**Lon: 99°09W**

Precipitation (inches)																								
	Precipitation Totals									Mean Number of Days (3)				Precipitation Probabilities (1) Probability that the monthly/annual precipitation will be equal to or less than the indicated amount										
	Means/ Medians(1)		Extremes							Daily Precipitation				Monthly/Annual Precipitation vs Probability Levels These values were determined from the incomplete gamma distribution										
Month	Mean	Med-ian	Highest Daily(2)	Year	Day	Highest Monthly(1)	Year	Lowest Monthly(1)	Year	>= 0.01	>= 0.10	>= 0.50	>= 1.00	.05	.10	.20	.30	.40	.50	.60	.70	.80	.90	.95
Jan	.96	.82	1.59	1965	9	2.77	1973	.00+	1986	3.0	2.3	.6	.2	.00	.00	.16	.34	.52	.72	.94	1.22	1.60	2.20	2.80
Feb	1.53	1.09	3.33	1981	28	4.17	1993	.00+	1996	4.0	3.0	.9	.4	.00	.10	.33	.57	.82	1.11	1.46	1.89	2.49	3.49	4.48
Mar	1.74	1.56	2.84	2000	23	4.08	1999	.05	1971	4.5	3.5	1.4	.4	.23	.37	.62	.86	1.11	1.39	1.72	2.12	2.66	3.55	4.41
Apr	1.64	1.37	2.47	1990	19	5.16	1990	.09	1991	5.0	4.0	1.1	.2	.19	.32	.55	.78	1.02	1.29	1.61	2.00	2.54	3.42	4.28
May	3.45	2.88	3.54	1991	3	11.44	1982	.10	1988	6.9	5.0	2.5	1.1	.37	.63	1.11	1.59	2.10	2.68	3.36	4.21	5.36	7.28	9.14
Jun	3.44	3.18	3.11	1995	5	8.46	1992	.57	1994	5.9	4.7	2.4	1.0	.86	1.18	1.68	2.13	2.57	3.03	3.54	4.16	4.96	6.23	7.42
Jul	1.43	1.44	2.42	1991	25	5.27	1975	.00+	1999	4.3	3.3	.9	.2	.00	.15	.40	.63	.87	1.12	1.42	1.78	2.27	3.07	3.85
Aug	2.31	1.88	4.28	1978	5	8.33	1978	.00+	2000	5.2	3.7	1.3	.7	.00	.18	.56	.92	1.31	1.74	2.24	2.86	3.72	5.14	6.54
Sep	3.07	2.00	6.25	1986	1	11.61	1986	.00	2000	5.2	4.3	2.0	.9	.08	.28	.69	1.12	1.61	2.18	2.87	3.74	4.96	7.02	9.06
Oct	2.48	2.21	3.11	1985	18	6.67	1983	.00	1987	5.4	4.2	1.6	.7	.07	.24	.58	.93	1.33	1.78	2.33	3.03	4.00	5.64	7.26
Nov	1.48	1.27	2.45	2000	24	4.66	2000	.00	1989	3.7	2.7	.9	.5	.08	.21	.44	.65	.88	1.14	1.44	1.82	2.33	3.17	3.99
Dec	1.32	.86	2.19	1991	20	4.70	1984	.00	1996	3.8	2.7	.8	.2	.05	.16	.35	.54	.75	.99	1.27	1.62	2.10	2.91	3.71
Ann	24.85	23.29	6.25	Sep 1986	1	11.61	Sep 1986	.00+	Sep 2000	56.9	43.4	16.4	6.5	17.76	19.13	20.89	22.22	23.40	24.55	25.73	27.03	28.61	30.90	32.88

+ Also occurred on an earlier date(s)

# Denotes amounts of a trace

@ Denotes mean number of days greater than 0 but less than .05

\*\* Statistics not computed because less than six years out of thirty had measurable precipitation

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1962-2001

(3) Derived from 1971-2000 serially complete daily data

Complete documentation available from:  
[www.ncdc.noaa.gov/oa/climate/normals/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normals/usnormals.html)

# Climatography of the United States

## No. 20 1971-2000

National Climatic Data Center  
Federal Building  
151 Patton Avenue  
Asheville, North Carolina 28801  
[www.ncdc.noaa.gov](http://www.ncdc.noaa.gov)

**Station: LAKE KEMP, TX**

**COOP ID: 414982**

**Climate Division: TX 2**

**NWS Call Sign:**

**Elevation: 1,167 Feet**

**Lat: 33°45N**

**Lon: 99°09W**

Snow (inches)																							
Snow Totals															Mean Number of Days (1)								
Means/Medians (1)					Extremes (2)										Snow Fall >= Thresholds					Snow Depth >= Thresholds			
Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median	Highest Daily Snow Fall	Year	Day	Highest Monthly Snow Fall	Year	Highest Daily Snow Depth	Year	Day	Highest Monthly Mean Snow Depth	Year	0.1	1.0	3.0	5.0	10.0	1	3	5	10
Jan	1.0	.0	#	0	6.0	1992	18	6.0	1992	6	1992	18	#+	1997	.6	.2	.1	.1	.0	.5	.1	.1	.0
Feb	1.3	.0	#	0	4.0	1978	17	8.5	1978	4	1978	17	#	1978	.8	.5	.1	.0	.0	.3	.1	.0	.0
Mar	#	.0	#	0	#	1975	13	#	1975	#+	1998	8	#+	1998	.0	.0	.0	.0	.0	.0	.0	.0	.0
Apr	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
May	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Jun	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Jul	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Aug	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Sep	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	.1	.0	#	0	2.0	2000	8	2.0	2000	2+	2000	8	#+	2000	.1	.1	.0	.0	.0	.1	.0	.0	.0
Dec	.3	.0	0	0	3.0	1983	16	3.0	1983	0	0	0	0	0	.3	.2	.1	.0	.0	.0	.0	.0	.0
Ann	2.7	.0	N/A	N/A	6.0	Jan 1992	18	8.5	Feb 1978	6	Jan 1992	18	#+	Nov 2000	1.8	1.0	.3	.1	.0	.9	.2	.1	.0

+ Also occurred on an earlier date(s) #Denotes trace amounts

@ Denotes mean number of days greater than 0 but less than .05

-9/-9.9 represents missing values

Annual statistics for Mean/Median snow depths are not appropriate

(1) Derived from Snow Climatology and 1971-2000 daily data

(2) Derived from 1971-2000 daily data

Complete documentation available from:

[www.ncdc.noaa.gov/oa/climate/normals/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normals/usnormals.html)

# Climatography of the United States

## No. 20 1971-2000

**Station: LAKE KEMP, TX**

**COOP ID: 414982**

**Climate Division: TX 2**

**NWS Call Sign:**

**Elevation: 1,167 Feet**

**Lat: 33° 45N**

**Lon: 99° 09W**

Freeze Data									
Spring Freeze Dates (Month/Day)									
Temp (F)	Probability of later date in spring (thru Jul 31) than indicated(*)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	4/16	4/12	4/09	4/06	4/04	4/02	3/30	3/27	3/23
32	4/10	4/03	3/29	3/25	3/21	3/18	3/13	3/09	3/02
28	4/05	3/28	3/23	3/18	3/13	3/09	3/04	2/26	2/19
24	3/21	3/12	3/06	3/01	2/24	2/19	2/14	2/07	1/30
20	3/10	3/01	2/22	2/17	2/11	2/06	1/31	1/24	1/13
16	3/01	2/19	2/12	2/05	1/30	1/23	1/15	12/30	0/00
Fall Freeze Dates (Month/Day)									
Temp (F)	Probability of earlier date in fall (beginning Aug 1) than indicated(*)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	10/14	10/20	10/25	10/29	11/02	11/06	11/10	11/15	11/22
32	10/27	11/01	11/05	11/08	11/11	11/15	11/18	11/22	11/27
28	11/06	11/11	11/15	11/18	11/22	11/25	11/28	12/02	12/07
24	11/13	11/20	11/25	11/30	12/04	12/08	12/13	12/18	12/26
20	11/15	11/26	12/04	12/10	12/17	12/23	12/30	1/08	1/21
16	11/28	12/08	12/16	12/23	12/30	1/07	1/17	0/00	0/00
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	234	226	221	216	212	207	202	197	189
32	257	250	244	239	234	230	225	219	211
28	282	272	264	258	252	247	240	233	223
24	314	303	295	289	283	277	270	262	252
20	>365	334	322	313	305	297	290	281	268
16	>365	>365	>365	354	336	324	313	301	286

\* Probability of observing a temperature as cold, or colder, later in the spring or earlier in the fall than the indicated date.

**0/00** Indicates that the probability of occurrence of threshold temperature is less than the indicated probability.

Derived from 1971-2000 serially complete daily data

Complete documentation available from:  
[www.ncdc.noaa.gov/oa/climate/normal/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormals.html)

**Climatography**  
**of the United States**  
**No. 20**  
**1971-2000**

**Station: LAKE KEMP, TX**

**COOP ID: 414982**

**Climate Division: TX 2      NWS Call Sign:      Elevation: 1,167 Feet    Lat: 33° 45N      Lon: 99° 09W**

Degree Days to Selected Base Temperatures (°F)													
Base	Heating Degree Days (1)												
Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	779	562	359	124	27	1	0	0	9	84	396	696	3037
60	628	433	227	52	7	0	0	0	0	30	269	543	2189
57	542	362	163	25	2	0	0	0	0	14	205	454	1767
55	485	317	127	15	0	0	0	0	0	7	167	398	1516
50	350	222	60	2	0	0	0	0	0	1	92	266	993
32	51	27	1	0	0	0	0	0	0	0	2	18	99

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	295	398	673	928	1232	1438	1639	1603	1314	1025	606	346	11497
55	15	44	86	253	519	748	926	890	624	320	81	12	4518
57	11	32	60	204	459	688	864	828	564	264	59	7	4040
60	4	20	31	140	371	598	771	735	474	188	33	2	3367
65	0	8	9	63	236	449	616	580	333	87	11	0	2392
70	0	0	0	20	131	305	461	427	208	29	2	0	1583

Growing Degree Units (2)																								
Base	Growing Degree Units (Monthly)												Growing Degree Units (Accumulated Monthly)											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
40	136	236	460	702	996	1204	1399	1361	1075	781	383	175	136	372	832	1534	2530	3734	5133	6494	7569	8350	8733	8908
45	64	144	323	553	841	1054	1244	1206	925	630	263	93	64	208	531	1084	1925	2979	4223	5429	6354	6984	7247	7340
50	23	75	205	407	686	904	1089	1051	775	475	159	38	23	98	303	710	1396	2300	3389	4440	5215	5690	5849	5887
55	3	31	111	274	533	754	934	896	627	334	82	11	3	34	145	419	952	1706	2640	3536	4163	4497	4579	4590
60	0	7	53	161	384	605	779	741	479	208	35	1	0	7	60	221	605	1210	1989	2730	3209	3417	3452	3453
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	115	173	297	440	649	801	907	887	703	496	245	132	115	288	585	1025	1674	2475	3382	4269	4972	5468	5713	5845

(1) Derived from the 1971-2000 Monthly Normals

(2) Derived from 1971-2000 serially complete daily data

**Note:** For corn, temperatures below 50 are set to 50, and temperatures above 86 are set to 86

Complete documentation available from:  
[www.ncdc.noaa.gov/oa/climate/normals/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normals/usnormals.html)

## Notes

- a. The monthly means are simple arithmetic averages computed by summing the monthly values for the period 1971-2000 and dividing by thirty. Prior to averaging, the data are adjusted if necessary to compensate for data quality issues, station moves or changes in station reporting practices. Missing months are replaced by estimates based on neighboring stations.
- b. The median is defined as the middle value in an ordered set of values. The median is being provided for the snow and precipitation elements because the mean can be a misleading value for precipitation normals.
- c. Only observed validated values were used to select the extreme daily values.
- d. Extreme monthly temperature/precipitation means were selected from the monthly normals data.  
Monthly snow extremes were calculated from daily values quality controlled to be consistent with the Snow Climatology.
- e. Degree Days were derived using the same techniques as the 1971-2000 normals.  
Complete documentation for the 1971-2000 Normals is available on the internet from:  
[www.ncdc.noaa.gov/oa/climate/normal/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormals.html)
- f. Mean "number of days statistics" for temperature and precipitation were calculated from a serially complete daily data set.  
Documentation of the serially complete data set is available from the link below:
- g. Snowfall and snow depth statistics were derived from the Snow Climatology.  
Documentation for the Snow Climatology project is available from the link under references.

## Data Sources for Tables

Several different data sources were used to create the Clim20 climate summaries. In some cases the daily extremes appear inconsistent with the monthly extremes and or the mean number of days statistics. For example, a high daily extreme value may not be reflected in the highest monthly value or the mean number of days threshold that is less than and equal to the extreme value. Some of these difference are caused by different periods of record. Daily extremes are derived from the station's entire period of record while the serial data and normals data were for the 1971-2000 period. Therefore extremes observed before 1971 would not be included in the 1971-2000 normals or the 1971-2000 serial daily data set. Inconsistencies can also occur when monthly values are adjusted to reflect the current observing conditions or were replaced during the 1971-2000 Monthly Normals processing and are not reconciled with the Summary of the Day data.

- |   |   |
|---|---|
| <ol style="list-style-type: none"><li>a. Temperature/ Precipitation Tables<ol style="list-style-type: none"><li>1. 1971-2000 Monthly Normals</li><li>2. Cooperative Summary of the Day</li><li>3. National Weather Service station records</li><li>4. 1971-2000 serially complete daily data</li></ol></li><li>b. Degree Day Table<ol style="list-style-type: none"><li>1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals</li><li>2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data</li></ol></li></ol> | <ol style="list-style-type: none"><li>c. Snow Tables<ol style="list-style-type: none"><li>1. Snow Climatology</li><li>2. Cooperative Summary of the Day</li></ol></li><li>d. Freeze Data Table<br/>1971-2000 serially complete daily data</li></ol> |
|---|---|

## References

U.S. Climate Normals 1971-2000, [www.ncdc.noaa.gov/normal.html](http://www.ncdc.noaa.gov/normal.html)  
U.S. Climate Normals 1971-2000-Products Clim20, [www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html)  
Snow Climatology Project Description, [www.ncdc.noaa.gov/oa/climate/monitoring/snowclim/mainpage.html](http://www.ncdc.noaa.gov/oa/climate/monitoring/snowclim/mainpage.html)  
Eischeid, J. K., P. Pasteris, H. F. Diaz, M. Plantico, and N. Lott, 2000: Creating a serially complete, national daily time series of temperature and precipitation for the Western United States. J. Appl. Meteorol., 39, 1580-1591,  
[www1.ncdc.noaa.gov/pub/data/special/serialcomplete\\_jam\\_0900.pdf](http://www1.ncdc.noaa.gov/pub/data/special/serialcomplete_jam_0900.pdf)