U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data,
and Information Service

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: PALESTINE 2 NE, TX **COOP ID: 416757**

Climate Division: TX 4 **NWS Call Sign:** **Elevation: 465 Feet** **Lat: 31˚47N** **Lon: 95˚36W**

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	58.3	37.4	47.9	84	1943	23	54.5	1999	-4	1930	18	37.2	1978	543	4	.0	.0	22.5	1.0	12.4	.0
Feb	63.4	41.3	52.4	92	1986	20	59.9	2000	5	1933	8	41.2	1978	368	13	.0	.1	23.2	.7	7.5	.0
Mar	71.5	48.4	60.0	95	1946	30	66.1	1974	14+	1980	2	54.9	1987	188	31	.0	@	30.0	@	2.6	.0
Apr	77.7	54.7	66.2	95	1963	10	71.9	1981	28	1989	11	61.4	1997	57	93	.0	.2	30.0	.0	.2	.0
May	83.8	62.6	73.2	99+	1998	31	80.6	1996	40+	1992	8	68.7	1976	11	265	.0	3.7	31.0	.0	.0	.0
Jun	89.7	68.9	79.3	103+	1998	15	85.8	1998	48	1988	11	75.9	1989	0	428	.5	15.9	30.0	.0	.0	.0
Jul	93.9	71.8	82.9	114	1954	26	89.2	1998	54	1990	15	79.7	1972	0	554	3.5	26.6	31.0	.0	.0	.0
Aug	94.4	71.0	82.7	110	1954	31	86.5	2000	53+	1989	10	78.6	1992	0	548	3.1	26.2	31.0	.0	.0	.0
Sep	88.6	65.5	77.1	109	2000	4	82.1	1998	40+	1989	25	70.3	1974	2	363	.4	15.0	30.0	.0	.0	.0
Oct	79.9	55.5	67.7	101+	1953	2	71.1	1971	27+	1993	31	60.8	1976	40	124	.0	2.0	30.9	.0	.2	.0
Nov	68.1	46.7	57.4	88	1994	8	63.0	1973	18	1993	27	50.5	1976	254	26	.0	.0	28.1	@	3.5	.0
Dec	60.1	39.2	49.7	83	1955	25	59.4	1984	-1	1989	23	38.4	1983	485	9	.0	.0	24.6	.6	9.3	@
Ann	77.5	55.3	66.4	114	Jul 1954	26	89.2	Jul 1998	-4	Jan 1930	18	37.2	Jan 1978	1948	2458	7.5	89.7	342.3	2.3	35.7	@

\+ 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

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1930-2001

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

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Precipitation (inches)

Precipitation Totals

Month	Means/ Medians(1) Mean	Means/ Medians(1) Median	Extremes Highest Daily(2)	Year	Day	Highest Monthly(1)	Year	Lowest Monthly(1)	Year
Jan	3.60	3.30	6.10	1999	29	9.10	1999	.13	1971
Feb	3.34	3.12	2.60	1994	22	8.66	1997	.21	1999
Mar	3.87	3.58	3.61	1965	30	8.60	1979	.75	1971
Apr	3.80	3.58	4.22	1976	29	8.08	1991	.19	1983
May	4.51	4.43	4.47	1971	11	8.98	1991	.02	1998
Jun	4.53	3.73	6.20	1989	5	12.48	1989	1.19	1998
Jul	2.55	2.42	5.02	1940	2	10.83	1979	.00	1993
Aug	3.23	2.23	9.10	1991	14	13.41	1997	.01	1999
Sep	3.45	3.05	6.09	1932	4	9.00	1974	.17	1982
Oct	4.90	4.47	8.86	1957	14	12.58	1984	.37	1987
Nov	4.44	4.06	7.11	1940	23	13.82	2000	.22	1999
Dec	4.16	3.81	6.04	1992	15	9.42	1991	.89	1981
Ann	46.38	44.56	9.10	Aug 1991	14	13.82	Nov 2000	.00	Jul 1993

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	10.0	6.0	2.4	1.0
Feb	8.1	5.2	2.2	1.2
Mar	9.3	5.8	2.5	1.1
Apr	7.4	5.0	2.7	1.3
May	9.1	6.0	2.9	1.6
Jun	7.8	5.4	2.8	1.4
Jul	6.4	3.9	1.6	.8
Aug	6.4	4.2	1.9	.8
Sep	7.5	5.0	2.1	1.1
Oct	6.8	4.6	2.6	1.5
Nov	9.1	5.9	2.7	1.6
Dec	9.3	6.0	2.7	1.3
Ann	97.2	63.0	29.1	14.7

Precipitation Probabilities (1)

Probability that the monthly/annual precipitation will be equal to or less than the indicated amount

Monthly/Annual Precipitation vs Probability Levels
These values were determined from the incomplete gamma distribution

Month	.05	.10	.20	.30	.40	.50	.60	.70	.80	.90	.95
Jan	.57	.87	1.40	1.89	2.41	2.97	3.61	4.39	5.44	7.15	8.78
Feb	.58	.88	1.36	1.82	2.29	2.79	3.37	4.07	5.00	6.51	7.94
Mar	1.15	1.52	2.07	2.55	3.01	3.49	4.02	4.65	5.45	6.71	7.88
Apr	.84	1.20	1.75	2.25	2.76	3.29	3.89	4.61	5.56	7.07	8.49
May	.55	.90	1.54	2.17	2.83	3.58	4.44	5.51	6.96	9.35	11.67
Jun	.87	1.28	1.95	2.56	3.18	3.85	4.60	5.51	6.72	8.67	10.51
Jul	.10	.30	.67	1.04	1.44	1.90	2.45	3.13	4.07	5.65	7.20
Aug	.12	.27	.62	1.03	1.53	2.13	2.87	3.85	5.24	7.66	10.10
Sep	.66	.97	1.48	1.94	2.42	2.92	3.50	4.20	5.12	6.61	8.02
Oct	.72	1.13	1.84	2.52	3.23	4.00	4.89	5.98	7.45	9.84	12.14
Nov	.89	1.29	1.94	2.54	3.14	3.79	4.52	5.40	6.57	8.43	10.21
Dec	1.25	1.64	2.23	2.74	3.24	3.75	4.32	4.99	5.86	7.21	8.46
Ann	30.26	33.28	37.20	40.21	42.91	45.54	48.28	51.33	55.06	60.52	65.28

\+ 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: 1930-2001
(3) Derived from 1971-2000 serially complete daily data

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Snow (inches)

Snow Totals

Means/Medians (1)

Extremes (2)

Mean Number of Days (1)

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	.7	.0	#	0	3.0	1973	11	4.8	1978	7	1982	14	1	1982	.3	.2	.1	.0	.0	.3	.1	.0	.0
Feb	.4	.0	#	0	2.0	1978	10	2.7	1988	2	1978	10	#+	1981	.3	.2	.0	.0	.0	.1	.0	.0	.0
Mar	.0	.0	#	0	.3	1978	3	.3	1978	#+	1987	30	#+	1987	.1	.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	.0	.0	#	0	.5	1980	26	.5	1980	1	1980	26	#	1980	.1	.0	.0	.0	.0	@	.0	.0	.0
Dec	#	.0	0	0	#	1978	31	#	1978	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Ann	1.1	.0	N/A	N/A	3.0	Jan 1973	11	4.8	Jan 1978	7	Jan 1982	14	1	Jan 1982	.8	.4	.1	.0	.0	.4	.1	.0	.0

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

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

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

(2) Derived from 1971-2000 daily data

-9/-9.9 represents missing values

Annual statistics for Mean/Median snow depths are not appropriate

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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	4/14	4/08	4/03	3/30	3/26	3/22	3/18	3/13	3/06
32	4/04	3/28	3/23	3/19	3/15	3/11	3/07	3/02	2/23
28	3/23	3/14	3/08	3/02	2/25	2/20	2/15	2/08	1/30
24	3/08	2/27	2/21	2/16	2/11	2/06	2/01	1/25	1/17
20	2/25	2/15	2/07	2/01	1/26	1/19	1/12	1/02	0/00
16	2/13	2/03	1/26	1/19	1/11	1/02	12/17	0/00	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	10/22	10/28	11/01	11/05	11/08	11/11	11/15	11/19	11/25
32	10/28	11/04	11/09	11/14	11/18	11/22	11/26	12/01	12/09
28	11/06	11/13	11/19	11/23	11/28	12/02	12/07	12/12	12/20
24	11/17	11/28	12/05	12/11	12/17	12/23	12/29	1/05	1/15
20	12/01	12/11	12/17	12/23	12/29	1/04	1/12	1/23	0/00
16	12/16	12/26	1/02	1/10	1/17	1/27	0/00	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	252	243	237	232	227	222	216	210	201
32	277	267	259	253	247	241	235	227	217
28	310	298	289	282	275	268	260	252	240
24	342	328	320	313	306	300	293	285	274
20	>365	>365	>365	348	336	327	319	310	298
16	>365	>365	>365	>365	>365	355	343	333	321

***** 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

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Degree Days to Selected Base Temperatures (˚F)

Heating Degree Days (1)

Base Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	543	368	188	57	11	0	0	0	2	40	254	485	1948
60	404	250	94	13	1	0	0	0	0	9	151	346	1268
57	328	191	55	4	0	0	0	0	0	3	104	271	956
55	283	158	36	1	0	0	0	0	0	1	78	228	785
50	189	88	10	0	0	0	0	0	0	0	32	139	458
32	15	2	0	0	0	0	0	0	0	0	0	5	22

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	506	571	867	1026	1277	1418	1577	1571	1351	1107	762	551	12584
55	61	83	190	337	564	728	864	858	661	396	150	62	4954
57	45	60	146	280	502	668	802	796	601	335	116	43	4394
60	27	35	93	199	410	578	709	703	511	248	73	24	3610
65	4	13	31	93	265	428	554	548	363	124	26	9	2458
70	0	2	7	29	144	281	399	393	225	42	7	0	1529

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	280	370	595	774	1027	1177	1331	1324	1111	853	512	317	280	650	1245	2019	3046	4223	5554	6878	7989	8842	9354	9671
45	176	256	444	624	872	1027	1176	1169	961	698	378	202	176	432	876	1500	2372	3399	4575	5744	6705	7403	7781	7983
50	100	160	310	477	717	877	1021	1014	811	544	254	116	100	260	570	1047	1764	2641	3662	4676	5487	6031	6285	6401
55	48	89	191	333	562	727	866	859	661	395	151	61	48	137	328	661	1223	1950	2816	3675	4336	4731	4882	4943
60	22	40	99	202	408	577	711	704	512	257	80	26	22	62	161	363	771	1348	2059	2763	3275	3532	3612	3638
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	175	231	372	500	700	818	901	890	751	563	317	199	175	406	778	1278	1978	2796	3697	4587	5338	5901	6218	6417

(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:
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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.
Compete documentation for the 1971-2000 Normals is available on the internet from:
www.ncdc.noaa.gov/oa/climate/normals/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 are 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.

a. Temperature/ Precipitation Tables
   1. 1971-2000 Monthly Normals
   2. Cooperative Summary of the Day
   3. National Weather Service station records
   4. 1971-2000 serially complete daily data

b. Degree Day Table
   1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals
   2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data

c. Snow Tables
   1. Snow Climatology
   2. Cooperative Summary of the Day

d. Freeze Data Table
   1971-2000 serially complete daily data

References

U.S. Climate Normals 1971-2000, www.ncdc.noaa.gov/normals.html
U.S. Climate Normals 1971-2000-Products Clim20, www.ncdc.noaa.gov/oa/climate/normals/usnormalsprods.html
Snow Climatology Project Description, 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