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: DUBLIN, TX **COOP ID: 412598**

Climate Division: TX 3 **NWS Call Sign:** **Elevation: 1,502 Feet** **Lat: 32˚06N** **Lon: 98˚20W**

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	54.5	30.7	42.6	90	1943	23	50.0	1990	-4	1930	18	32.4	1979	694	0	.0	.0	20.0	2.3	16.6	.0
Feb	59.7	35.2	47.5	98	1918	23	55.7	1976	-1+	1933	9	35.8	1978	497	6	.0	.1	21.6	1.3	9.7	.0
Mar	68.0	42.4	55.2	100	1918	12	61.0	1974	8+	1943	4	50.9	1996	312	8	.0	.3	28.7	.2	4.2	.0
Apr	75.8	50.4	63.1	104	1925	18	68.2	1981	24+	1915	3	57.3	1997	118	60	.0	1.2	29.7	.0	.4	.0
May	82.2	59.0	70.6	105	1927	28	76.6	1996	34	1903	1	66.2	1979	23	197	.1	4.8	31.0	.0	.0	.0
Jun	88.7	66.2	77.5	110	1918	26	81.9	1990	48	1964	1	73.8	1983	0	374	.9	14.3	30.0	.0	.0	.0
Jul	93.9	69.5	81.7	113	1933	14	86.3	1978	54	1915	23	78.0	1976	0	517	5.1	25.2	31.0	.0	.0	.0
Aug	94.0	68.8	81.4	114	1936	11	86.4	1999	46	1915	31	76.0	1971	0	508	5.7	24.9	31.0	.0	.0	.0
Sep	87.0	62.6	74.8	109+	2000	6	80.8	1977	37+	1942	27	67.0	1974	8	302	.9	13.2	30.0	.0	.0	.0
Oct	77.3	52.8	65.1	105	1917	4	69.2	1979	19	1917	30	56.7	1976	82	83	@	2.1	30.7	.0	.3	.0
Nov	64.8	41.7	53.3	92	1980	9	59.4	1999	12	1911	29	45.5	1976	364	11	.0	@	26.6	.2	4.7	.0
Dec	56.4	33.3	44.9	90	1955	25	50.5	1984	-7+	1989	24	34.0	1983	626	0	.0	.0	22.1	1.5	12.8	.1
Ann	75.2	51.1	63.1	114	Aug 1936	11	86.4	Aug 1999	-7+	Dec 1989	24	32.4	Jan 1979	2724	2066	12.7	86.1	332.4	5.5	48.7	.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

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1897-2001

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

Issue Date: February 2004

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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	1.59	1.24	3.22	1938	23	5.01	1979	.00	1986
Feb	2.39	1.68	4.00	1997	20	11.74	1997	.00	1999
Mar	2.38	2.15	4.02	1977	27	5.07	1977	.05+	1972
Apr	3.11	2.45	6.00	1990	26	9.08	1990	.61	1974
May	5.17	5.08	8.71	1956	1	12.69	1994	1.41	1993
Jun	4.41	4.74	4.72	1985	6	10.84	1986	.73	1972
Jul	2.05	1.88	5.65	1915	4	7.23	1973	.00+	2000
Aug	3.18	2.34	4.50	1989	2	13.23	1996	.00+	2000
Sep	3.31	3.64	6.04	1942	3	8.44	1980	.13	1977
Oct	3.54	2.74	5.56	1959	4	9.41	1984	.15	1992
Nov	2.34	1.70	7.50	1918	7	8.40	1998	.08	1979
Dec	2.26	1.76	3.75	1991	20	9.37	1991	.10	1973
Ann	35.73	35.97	8.71	May 1956	1	13.23	Aug 1996	.00+	Aug 2000

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	6.1	3.5	1.1	.3
Feb	5.8	4.1	1.7	.6
Mar	6.3	4.6	1.7	.4
Apr	6.3	4.1	2.1	.9
May	8.2	6.1	3.1	1.5
Jun	7.3	5.7	2.9	1.3
Jul	4.9	3.3	1.4	.6
Aug	5.7	4.4	1.8	.9
Sep	6.4	4.7	2.1	1.2
Oct	6.7	4.9	2.6	1.3
Nov	5.6	4.0	1.5	.7
Dec	6.1	4.4	1.6	.5
Ann	75.4	53.8	23.6	10.2

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	.04	.14	.35	.57	.83	1.12	1.48	1.93	2.57	3.64	4.71
Feb	.09	.27	.62	.96	1.34	1.78	2.29	2.94	3.83	5.31	6.78
Mar	.27	.45	.79	1.12	1.47	1.87	2.33	2.91	3.69	4.98	6.23
Apr	.47	.73	1.18	1.61	2.06	2.55	3.11	3.80	4.73	6.23	7.68
May	1.67	2.17	2.89	3.50	4.10	4.71	5.38	6.17	7.18	8.75	10.21
Jun	.69	1.06	1.70	2.31	2.94	3.63	4.42	5.38	6.68	8.78	10.79
Jul	.00	.00	.63	1.05	1.41	1.78	2.17	2.65	3.27	4.20	5.11
Aug	.00	.19	.66	1.14	1.67	2.28	3.01	3.91	5.18	7.31	9.41
Sep	.24	.45	.87	1.33	1.84	2.42	3.13	4.02	5.26	7.35	9.41
Oct	.37	.63	1.11	1.61	2.14	2.74	3.44	4.32	5.52	7.52	9.46
Nov	.24	.42	.74	1.06	1.41	1.81	2.27	2.85	3.64	4.96	6.24
Dec	.15	.29	.57	.88	1.22	1.63	2.11	2.73	3.60	5.06	6.51
Ann	22.85	25.24	28.36	30.76	32.92	35.03	37.22	39.67	42.67	47.07	50.91

\+ 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: 1897-2001
(3) Derived from 1971-2000 serially complete daily data

Complete documentation available from:
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Snow (inches)

Snow Totals

Means/Medians (1)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	1.4	.0	#	#
Feb	1.0	.0	#	#
Mar	.1	.0	#	0
Apr	.0	.0	0	0
May	.0	.0	0	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.0	.0	0	0
Oct	#	.0	0	0
Nov	.6	.0	#	0
Dec	.2	.0	#	0
Ann	3.3	.0	N/A	N/A

Extremes (2)

Month	Highest Daily Snow Fall	Year	Day	Highest Monthly Snow Fall	Year	Highest Daily Snow Depth	Year	Day	Highest Monthly Mean Snow Depth	Year
Jan	6.5	1978	12	10.8	1978	7	1978	12	1	1982
Feb	5.0	1978	17	8.9	1978	5	1975	23	1	1978
Mar	2.5	1978	4	2.5	1978	3	1978	4	#+	1989
Apr	.0	0	0	.0	0	0	0	0	0	0
May	.0	0	0	.0	0	0	0	0	0	0
Jun	.0	0	0	.0	0	0	0	0	0	0
Jul	.0	0	0	.0	0	0	0	0	0	0
Aug	.0	0	0	.0	0	0	0	0	0	0
Sep	.0	0	0	.0	0	0	0	0	0	0
Oct	#	1993	30	#	1993	0	0	0	0	0
Nov	6.5	1976	13	13.2	1976	5	1976	13	1	1976
Dec	3.0	1983	16	3.0	1983	5	1978	31	#+	1997
Ann	6.5+	Jan 1978	12	13.2	Nov 1976	7	Jan 1978	12	1+	Jan 1982

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	.8	.3	.2	.1	.0
Feb	.6	.3	.1	@	.0
Mar	.1	@	.0	.0	.0
Apr	.0	.0	.0	.0	.0
May	.0	.0	.0	.0	.0
Jun	.0	.0	.0	.0	.0
Jul	.0	.0	.0	.0	.0
Aug	.0	.0	.0	.0	.0
Sep	.0	.0	.0	.0	.0
Oct	.0	.0	.0	.0	.0
Nov	.1	.1	.1	.1	.0
Dec	.3	.1	@	.0	.0
Ann	1.9	.8	.4	.2	.0

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	.4	.2	.1	.0
Feb	.4	.1	@	.0
Mar	.1	@	.0	.0
Apr	.0	.0	.0	.0
May	.0	.0	.0	.0
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.0	.0	.0	.0
Oct	.0	.0	.0	.0
Nov	.1	.1	@	.0
Dec	.1	@	.0	.0
Ann	1.1	.4	.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

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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	4/10	4/07	4/05	4/02	3/31	3/28	3/25	3/21
32	4/05	3/30	3/26	3/22	3/18	3/15	3/11	3/06	2/28
28	4/01	3/22	3/16	3/10	3/05	2/28	2/22	2/15	2/06
24	3/13	3/04	2/26	2/20	2/15	2/10	2/05	1/29	1/20
20	3/02	2/19	2/12	2/05	1/29	1/22	1/14	1/02	0/00
16	2/20	2/10	2/03	1/27	1/21	1/13	1/03	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	10/21	10/27	10/31	11/03	11/06	11/09	11/13	11/17	11/22
32	10/29	11/04	11/08	11/12	11/15	11/19	11/22	11/26	12/02
28	11/08	11/15	11/21	11/25	11/29	12/03	12/08	12/13	12/20
24	11/18	11/26	12/01	12/06	12/11	12/15	12/20	12/26	1/03
20	11/26	12/04	12/10	12/15	12/20	12/26	1/01	1/11	0/00
16	12/07	12/16	12/23	12/29	1/04	1/11	1/22	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	235	229	225	221	217	214	210	205	199
32	264	256	251	246	241	237	232	226	218
28	302	291	282	275	269	262	255	247	235
24	330	317	309	302	296	290	283	276	265
20	>365	>365	>365	343	328	318	308	298	286
16	>365	>365	>365	>365	359	342	329	317	302

***** 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	694	497	312	118	23	0	0	0	8	82	364	626	2724
60	548	368	183	46	4	0	0	0	0	28	239	475	1891
57	462	296	123	21	1	0	0	0	0	12	177	390	1482
55	406	253	91	12	0	0	0	0	0	6	142	335	1245
50	281	163	35	1	0	0	0	0	0	1	73	214	768
32	30	10	0	0	0	0	0	0	0	0	0	11	51

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	359	443	719	933	1197	1364	1540	1531	1284	1024	637	409	11440
55	22	42	96	254	484	674	827	818	594	317	89	19	4236
57	16	29	67	204	423	614	765	756	534	261	64	13	3746
60	9	17	34	139	334	524	672	663	444	184	36	5	3061
65	0	6	8	60	197	374	517	508	302	83	11	0	2066
70	0	0	0	17	94	230	362	357	177	26	2	0	1265

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	202	297	506	716	973	1146	1312	1311	1072	805	436	239	202	499	1005	1721	2694	3840	5152	6463	7535	8340	8776	9015
45	119	197	366	566	818	996	1157	1156	922	651	306	141	119	316	682	1248	2066	3062	4219	5375	6297	6948	7254	7395
50	55	112	239	422	663	846	1002	1001	772	502	198	68	55	167	406	828	1491	2337	3339	4340	5112	5614	5812	5880
55	23	55	141	285	508	696	847	846	622	357	112	31	23	78	219	504	1012	1708	2555	3401	4023	4380	4492	4523
60	1	23	68	165	359	546	692	691	478	224	53	4	1	24	92	257	616	1162	1854	2545	3023	3247	3300	3304
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	143	191	312	449	643	784	877	865	714	511	266	152	143	334	646	1095	1738	2522	3399	4264	4978	5489	5755	5907

(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