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: THIOKOL PLANT 78, UT **COOP ID: 428668**

Climate Division: UT 3 **NWS Call Sign:** **Elevation: 4,600 Feet** **Lat: 41˚43N** **Lon: 112˚26W**

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	33.3	12.5	22.9	53	2000	16	32.0	1994	-28	1984	18	13.4	1979	1305	0	.0	.0	.5	13.3	30.4	6.5
Feb	40.1	17.1	28.6	65	1986	27	38.2	1995	-29+	1982	5	16.9	1985	1019	0	.0	.0	4.4	6.2	26.7	3.3
Mar	50.6	26.3	38.5	73+	1986	28	45.1	1986	-5	1964	8	28.3	1976	823	0	.0	.0	16.6	.7	25.6	.3
Apr	60.9	32.1	46.5	85+	1987	26	52.8	1992	11+	1968	8	40.2	1975	555	0	.0	.0	25.7	.0	16.9	.0
May	70.9	39.7	55.3	90	2001	24	61.2	1992	15	1965	6	49.8	1975	311	10	.0	.0	30.2	.0	5.2	.0
Jun	82.5	47.6	65.1	103	1970	23	71.2	1988	29+	1968	30	59.5	1998	103	104	.1	6.8	30.0	.0	.3	.0
Jul	91.6	54.4	73.0	105	2000	23	77.3	1989	35+	1968	1	66.8	1993	8	257	1.6	21.5	31.0	.0	.0	.0
Aug	90.5	53.5	72.0	107	2000	2	77.0	2000	30	1964	30	68.3	1975	9	226	1.0	19.1	31.0	.0	@	.0
Sep	79.5	43.6	61.6	98+	1995	1	68.8	1990	20+	1970	25	56.7	1971	153	49	.0	3.6	29.9	.0	3.1	.0
Oct	64.7	32.3	48.5	88	1992	1	54.6	1988	10	1991	24	43.7	1984	513	0	.0	.0	28.2	.1	17.0	.0
Nov	46.9	22.8	34.9	72	1999	6	41.6	1999	-17+	1979	28	29.3	1994	904	0	.0	.0	11.9	1.9	26.9	.6
Dec	35.5	13.8	24.7	60	1995	1	32.0	1977	-27	1972	10	14.9	1990	1251	0	.0	.0	1.4	10.1	30.2	3.3
Ann	62.3	33.0	47.6	107	Aug 2000	2	77.3	Jul 1989	-29+	Feb 1982	5	13.4	Jan 1979	6954	646	2.7	51.0	240.8	32.3	182.3	14.0

\+ 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: 1962-2001

(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	1.19	1.08	1.05	1993	9	3.14	1980	.06	1994
Feb	1.15	1.04	1.25	1976	9	3.11	1998	.00	1997
Mar	1.30	1.10	1.56	1975	25	3.72	1995	.19	1999
Apr	1.33	1.12	1.15	2001	7	3.16	1986	.18	1985
May	1.99	1.60	1.42	1966	10	5.74	1980	.02	1972
Jun	1.13	.93	1.96	1964	7	3.84	1997	.00+	2000
Jul	.87	.69	1.15	1998	24	2.70	1984	.00+	1988
Aug	.87	.61	2.45	1977	18	3.63	1977	.00	1985
Sep	1.18	1.01	2.26	1982	26	4.64	1982	.00	1974
Oct	1.35	1.43	1.79	1963	30	3.88	1981	.00	1978
Nov	1.17	1.11	1.19	1994	12	3.33	1987	.00	1993
Dec	.96	.71	1.00	1983	1	4.43	1983	.00	1976
Ann	14.49	14.61	2.45	Aug 1977	18	5.74	May 1980	.00+	Jun 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	7.9	3.8	.4	.1
Feb	6.5	3.7	.4	.1
Mar	7.9	3.8	.6	.1
Apr	7.9	4.2	.6	@
May	8.7	5.2	1.3	.2
Jun	4.5	2.7	.8	.2
Jul	3.7	2.0	.6	.1
Aug	3.9	2.1	.5	.2
Sep	5.0	3.0	.7	.1
Oct	5.9	3.3	.8	.1
Nov	8.2	3.4	.5	.1
Dec	7.2	3.4	.2	@
Ann	77.3	40.6	7.4	1.3

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	.18	.29	.46	.62	.79	.98	1.19	1.45	1.80	2.37	2.91
Feb	.04	.13	.29	.45	.63	.84	1.09	1.40	1.84	2.56	3.27
Mar	.25	.37	.56	.74	.92	1.11	1.33	1.59	1.93	2.49	3.02
Apr	.23	.34	.54	.72	.90	1.11	1.34	1.62	1.99	2.59	3.17
May	.17	.31	.58	.85	1.15	1.50	1.91	2.42	3.13	4.31	5.46
Jun	.00	.00	.21	.40	.60	.82	1.08	1.41	1.86	2.61	3.34
Jul	.00	.03	.12	.24	.39	.56	.77	1.05	1.45	2.13	2.83
Aug	.03	.10	.22	.34	.48	.64	.83	1.06	1.38	1.93	2.46
Sep	.02	.10	.25	.41	.60	.82	1.09	1.44	1.92	2.74	3.56
Oct	.05	.16	.35	.55	.77	1.01	1.30	1.66	2.16	2.99	3.80
Nov	.07	.18	.36	.53	.71	.91	1.15	1.44	1.84	2.49	3.12
Dec	.02	.08	.21	.34	.49	.67	.89	1.16	1.55	2.21	2.86
Ann	8.21	9.32	10.80	11.96	13.01	14.06	15.15	16.39	17.91	20.18	22.18

\+ 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:
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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	7.3	5.0	4	3
Feb	4.7	5.5	4	1
Mar	.8	.0	1	#
Apr	.1	.0	#	0
May	.0	.0	#	0
Jun	.1	.0	0	0
Jul	.0	.0	#	0
Aug	.0	.0	0	0
Sep	.0	.0	#	0
Oct	.0	.0	#	0
Nov	1.7	1.0	#	#
Dec	6.2	5.5	2	1
Ann	20.9	17.0	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	6.0	1979	18	21.1	1982	19	1984	3	16	1984
Feb	7.0	2000	24	13.6	1976	20	1984	11	17	1984
Mar	4.0	1974	2	4.2	1974	17	1984	6	6	1985
Apr	1.0	1982	6	1.0	1982	2	1974	10	#+	1982
May	.0	0	0	.0	0	#	1994	1	#	1994
Jun	2.0	1995	6	2.0	1995	0	0	0	0	0
Jul	.0	0	0	.0	0	#	1987	10	#	1987
Aug	.0	0	0	.0	0	0	0	0	0	0
Sep	.0	0	0	.0	0	#	1997	11	#	1997
Oct	1.0	1971	31	1.0	1971	1	1971	31	#	1971
Nov	7.5	1975	28	10.2	1983	13	1975	28	3	1985
Dec	10.5	1984	16	27.5	1971	20	1983	31	11	1983
Ann	10.5	Dec 1984	16	27.5	Dec 1971	20+	Feb 1984	11	17	Feb 1984

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	3.5	2.5	.6	.1	.0
Feb	2.0	1.9	.4	.1	.0
Mar	.4	.3	.1	.0	.0
Apr	.1	@	.0	.0	.0
May	.0	.0	.0	.0	.0
Jun	@	@	.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
Nov	1.6	1.1	.2	@	.0
Dec	3.6	2.5	.6	.2	@
Ann	11.2	8.3	1.9	.4	@

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	14.6	5.5	3.6	2.2
Feb	4.6	2.4	2.2	2.1
Mar	.7	.4	.3	.1
Apr	@	.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	2.7	1.7	.5	@
Dec	9.9	6.2	2.8	.8
Ann	32.5	16.2	9.4	5.2

+ 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	7/01	6/25	6/20	6/16	6/13	6/09	6/05	5/31	5/25
32	6/12	6/05	5/31	5/27	5/23	5/19	5/15	5/10	5/03
28	5/24	5/18	5/15	5/11	5/08	5/05	5/02	4/29	4/23
24	5/11	5/04	4/29	4/25	4/21	4/18	4/13	4/09	4/02
20	4/30	4/20	4/12	4/06	3/31	3/25	3/19	3/11	3/01
16	4/13	4/03	3/27	3/21	3/15	3/10	3/04	2/24	2/15

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	9/01	9/06	9/10	9/13	9/16	9/18	9/22	9/25	9/30
32	9/11	9/15	9/19	9/22	9/24	9/27	9/30	10/03	10/08
28	9/19	9/24	9/27	9/30	10/03	10/06	10/09	10/13	10/18
24	9/26	10/03	10/07	10/11	10/14	10/18	10/22	10/26	11/01
20	10/13	10/19	10/23	10/27	10/30	11/02	11/06	11/10	11/15
16	10/27	11/01	11/05	11/08	11/11	11/14	11/17	11/21	11/26

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	119	111	104	99	94	89	84	78	69
32	147	139	134	129	124	119	114	109	101
28	171	163	157	152	147	142	137	131	123
24	201	192	186	180	175	170	165	158	150
20	251	237	228	220	212	204	196	187	173
16	272	261	253	246	240	234	227	219	208

***** 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	1305	1019	823	555	311	103	8	9	153	513	904	1251	6954
60	1150	879	668	411	185	44	1	1	71	361	754	1096	5621
57	1057	795	577	329	125	23	0	0	39	275	664	1003	4887
55	995	739	520	277	91	14	0	0	24	223	604	941	4428
50	843	611	378	168	34	3	0	0	5	114	456	786	3398
32	357	221	57	5	0	0	0	0	0	1	73	278	992

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	75	125	257	440	722	991	1271	1240	886	511	159	50	6727
55	0	0	7	22	101	315	558	527	220	21	0	0	1771
57	0	0	1	14	72	264	496	465	175	11	0	0	1498
60	0	0	0	6	39	195	404	373	117	4	0	0	1138
65	0	0	0	0	10	104	257	226	49	0	0	0	646
70	0	0	0	0	2	44	132	106	14	0	0	0	298

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	0	9	67	220	482	755	1022	988	643	279	34	1	0	9	76	296	778	1533	2555	3543	4186	4465	4499	4500
45	0	0	19	115	333	605	867	833	494	160	9	0	0	0	19	134	467	1072	1939	2772	3266	3426	3435	3435
50	0	0	0	47	201	456	712	678	353	68	0	0	0	0	0	47	248	704	1416	2094	2447	2515	2515	2515
55	0	0	0	17	100	313	557	523	222	19	0	0	0	0	0	17	117	430	987	1510	1732	1751	1751	1751
60	0	0	0	1	39	193	403	370	115	3	0	0	0	0	0	1	40	233	636	1006	1121	1124	1124	1124
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	0	9	66	180	334	487	631	619	446	242	40	0	0	9	75	255	589	1076	1707	2326	2772	3014	3054	3054

(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

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