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: KOOSHAREM, UT **COOP ID: 424764**

Climate Division: UT 4 **NWS Call Sign:** **Elevation: 6,930 Feet** **Lat: 38˚31N** **Lon: 111˚53W**

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	38.5	10.8	24.7	64	1990	10	31.9	1981	-28	1963	13	17.5	1979	1251	0	.0	.0	4.0	6.9	30.7	6.5
Feb	42.4	14.9	28.7	69	1986	25	35.8	2000	-24	1985	1	22.5	1985	1018	0	.0	.0	6.7	3.4	27.9	3.5
Mar	49.0	21.9	35.5	73	1997	20	41.0	1989	-13	1969	9	29.6	1977	916	0	.0	.0	15.3	1.0	29.6	.5
Apr	57.4	26.5	42.0	79+	1959	30	48.7	1992	2	1975	2	34.4	1975	691	0	.0	.0	23.2	.1	25.8	.0
May	67.2	33.6	50.4	88	1977	31	55.4	2000	12+	1953	11	45.9	1995	453	0	.0	.0	30.0	.0	15.4	.0
Jun	78.0	40.6	59.3	95+	1954	23	63.3	1981	18	1976	14	53.5	1995	197	26	.0	1.3	29.9	.0	4.0	.0
Jul	84.0	47.2	65.6	98	1989	7	68.1	1996	29	1982	6	62.2	1995	49	69	.0	5.0	31.0	.0	.1	.0
Aug	81.4	45.9	63.7	96	1960	12	66.5	1994	26	1992	27	61.1	1975	72	29	.0	2.2	31.0	.0	.5	.0
Sep	74.0	38.3	56.2	92	1955	5	59.4	1979	14+	1965	18	51.1	1986	268	2	.0	.1	29.8	.0	7.1	.0
Oct	62.3	28.3	45.3	83	1979	7	50.2	1988	-6	1971	30	38.9	1984	611	0	.0	.0	27.5	.2	24.9	@
Nov	47.7	19.2	33.5	78	1962	3	38.7	1995	-17	1952	27	26.6	2000	947	0	.0	.0	14.1	2.5	29.1	1.0
Dec	39.8	12.0	25.9	63+	1980	31	34.5	1980	-32	1990	23	17.9	1990	1213	0	.0	.0	5.2	6.2	30.8	5.0
Ann	60.1	28.3	44.2	98	Jul 1989	7	68.1	Jul 1996	-32	Dec 1990	23	17.5	Jan 1979	7686	126	.0	8.6	247.7	20.3	225.9	16.5

\+ 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: 1948-2001

(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	.64	.49	.68+	1969	25	1.62	1978	.03	1972
Feb	.57	.47	.80	2001	20	1.69	1998	.01	1972
Mar	.78	.78	.77	1985	28	1.74	1978	.00	1997
Apr	.60	.54	.97	1974	2	1.39	1985	.07	1982
May	.88	.69	1.00	1995	12	2.49	1992	.03	1974
Jun	.59	.41	1.08	1949	4	2.30	1972	.00+	1980
Jul	1.08	.91	1.13	1981	18	2.65	1997	.10	1979
Aug	1.35	1.02	1.46	1984	15	4.27	1971	.11	1985
Sep	.96	.71	1.33	1967	22	3.50	1982	.12	1984
Oct	.97	.84	1.00	1948	28	2.45	1972	.02	1995
Nov	.56	.36	1.22	1978	2	2.58	1978	.08	1999
Dec	.51	.38	.74	1955	6	1.83	1983	.00	1976
Ann	9.49	9.94	1.46	Aug 1984	15	4.27	Aug 1971	.00+	Mar 1997

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	5.9	2.3	.1	.0
Feb	6.3	2.2	.1	.0
Mar	8.1	2.6	.2	.0
Apr	6.6	2.1	.1	.0
May	6.7	2.9	.2	@
Jun	4.2	1.6	.2	@
Jul	6.8	3.3	.4	@
Aug	8.2	3.8	.6	.1
Sep	5.9	2.6	.4	.1
Oct	5.9	3.3	.3	.0
Nov	5.0	2.0	.2	@
Dec	4.7	1.8	.1	.0
Ann	74.3	30.5	2.9	.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	.06	.11	.20	.29	.38	.49	.62	.78	1.00	1.37	1.73
Feb	.05	.10	.17	.25	.34	.44	.55	.70	.90	1.23	1.55
Mar	.08	.17	.29	.41	.52	.65	.79	.96	1.19	1.56	1.92
Apr	.10	.15	.24	.32	.40	.50	.60	.73	.90	1.18	1.45
May	.07	.13	.24	.36	.50	.65	.83	1.06	1.38	1.92	2.45
Jun	.00	.02	.10	.19	.28	.40	.54	.72	.97	1.40	1.83
Jul	.19	.28	.44	.58	.73	.90	1.09	1.31	1.62	2.11	2.57
Aug	.14	.24	.43	.61	.82	1.04	1.31	1.65	2.10	2.86	3.60
Sep	.07	.13	.26	.39	.54	.71	.91	1.16	1.52	2.11	2.70
Oct	.09	.16	.30	.43	.58	.74	.94	1.18	1.52	2.08	2.62
Nov	.06	.10	.18	.26	.34	.43	.55	.68	.87	1.19	1.49
Dec	.03	.09	.17	.24	.32	.41	.50	.63	.79	1.06	1.32
Ann	5.87	6.54	7.40	8.07	8.68	9.27	9.89	10.58	11.43	12.68	13.78

\+ 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: 1948-2001
(3) Derived from 1971-2000 serially complete daily data

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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	7.1	5.5	4	4
Feb	6.7	5.0	4	3
Mar	6.2	4.5	1	#
Apr	2.7	1.5	#	#
May	1.2	.4	#	0
Jun	.2	.0	#	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.1	.0	#	0
Oct	1.6	.0	#	#
Nov	3.3	3.1	#	#
Dec	5.3	3.8	2	2
Ann	34.4	23.8	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	12.0	1997	13	20.5	1980	20	1978	24	12+	1993
Feb	8.0	1998	15	26.3	1998	21	1993	21	18	1993
Mar	18.0	1985	28	23.0	1985	17	1985	29	9	1993
Apr	8.0	1974	2	10.5	1974	4	1974	2	#+	1999
May	5.0	1983	6	11.5	1983	3	1991	31	#+	2000
Jun	3.0	1999	4	3.0	1999	#+	1999	4	#+	1999
Jul	.0	0	0	.0	0	0	0	0	0	0
Aug	.0	0	0	.0	0	0	0	0	0	0
Sep	2.0	1988	12	2.0	1988	#	1988	12	#	1988
Oct	4.0	1984	17	11.7	1984	6	1984	18	#+	2000
Nov	9.0	1985	12	9.6	1982	10	1985	20	4	1985
Dec	8.0	1984	20	15.5	1984	10	1992	31	8	1978
Ann	18.0	Mar 1985	28	26.3	Feb 1998	21	Feb 1993	21	18	Feb 1993

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	4.8	3.1	1.1	.4	@
Feb	4.7	2.9	.8	.1	.0
Mar	3.7	2.4	.5	.1	@
Apr	1.6	.9	.3	.1	.0
May	1.0	.4	.1	@	.0
Jun	.1	.1	@	.0	.0
Jul	.0	.0	.0	.0	.0
Aug	.0	.0	.0	.0	.0
Sep	.1	.1	.0	.0	.0
Oct	.9	.6	.1	.0	.0
Nov	2.0	1.4	.4	.1	.0
Dec	3.1	2.2	.7	.1	.0
Ann	22.0	14.1	4.0	.9	@

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	15.8	9.5	4.6	.7
Feb	11.2	7.2	4.1	.1
Mar	3.9	1.7	.9	.2
Apr	.4	@	.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	.3	.1	@	.0
Nov	3.3	.9	.3	.0
Dec	9.5	6.0	3.0	.2
Ann	44.4	25.4	12.9	1.2

+ 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	7/16	7/11	7/06	7/02	6/29	6/26	6/22	6/18	6/12
32	7/02	6/26	6/22	6/18	6/14	6/11	6/07	6/03	5/28
28	6/21	6/15	6/10	6/06	6/02	5/29	5/25	5/20	5/13
24	6/09	6/01	5/27	5/23	5/19	5/14	5/10	5/05	4/27
20	5/25	5/18	5/13	5/09	5/05	5/01	4/27	4/22	4/15
16	5/03	4/27	4/22	4/18	4/15	4/12	4/08	4/04	3/29

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	8/11	8/17	8/22	8/25	8/29	9/01	9/05	9/09	9/15
32	8/21	8/27	8/31	9/04	9/07	9/11	9/15	9/19	9/25
28	9/08	9/13	9/16	9/19	9/22	9/24	9/27	10/01	10/05
24	9/16	9/21	9/24	9/27	9/30	10/03	10/06	10/10	10/14
20	9/22	9/28	10/03	10/07	10/10	10/14	10/18	10/22	10/29
16	10/06	10/12	10/16	10/19	10/23	10/26	10/29	11/02	11/08

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	83	75	69	65	60	55	50	45	37
32	111	102	95	90	84	79	73	66	57
28	133	126	120	116	111	107	102	97	89
24	157	149	143	138	134	129	124	119	111
20	184	175	169	163	158	152	147	140	131
16	214	206	200	195	190	185	180	174	165

***** 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	1251	1018	916	691	453	197	49	72	268	611	947	1213	7686
60	1096	878	761	541	304	100	8	11	139	456	797	1058	6149
57	1003	794	668	453	223	58	2	2	81	366	707	965	5322
55	941	738	606	396	174	38	1	0	53	308	647	903	4805
50	786	598	454	262	80	9	0	0	13	180	497	748	3627
32	269	157	60	14	0	0	0	0	0	2	71	237	810

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	42	64	167	313	570	819	1042	980	724	415	114	48	5298
55	0	0	0	5	32	167	330	268	87	7	0	0	896
57	0	0	0	2	18	127	269	207	55	3	0	0	681
60	0	0	0	0	6	78	183	123	23	1	0	0	414
65	0	0	0	0	0	26	69	29	2	0	0	0	126
70	0	0	0	0	0	5	11	1	0	0	0	0	17

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	1	1	29	122	323	574	795	733	489	207	26	0	1	2	31	153	476	1050	1845	2578	3067	3274	3300	3300
45	0	0	1	45	189	425	640	578	340	98	1	0	0	0	1	46	235	660	1300	1878	2218	2316	2317	2317
50	0	0	0	7	80	283	485	423	203	30	0	0	0	0	0	7	87	370	855	1278	1481	1511	1511	1511
55	0	0	0	0	22	155	330	270	89	3	0	0	0	0	0	0	22	177	507	777	866	869	869	869
60	0	0	0	0	2	62	181	130	23	0	0	0	0	0	0	0	2	64	245	375	398	398	398	398
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	5	18	60	142	279	425	530	497	379	226	61	9	5	23	83	225	504	929	1459	1956	2335	2561	2622	2631

(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