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: ALTON, UT **COOP ID: 420086**

Climate Division: UT 4 **NWS Call Sign:** **Elevation: 7,040 Feet** **Lat: 37˚26N** **Lon: 112˚29W**

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	40.0	15.7	27.9	64	1990	9	36.0	1986	-20	1979	30	20.0	1979	1152	0	.0	.0	5.0	6.2	30.6	1.6
Feb	42.9	18.1	30.5	68	1986	25	37.1	1995	-17	1933	10	25.0	1993	966	0	.0	.0	7.5	3.2	27.9	1.1
Mar	48.6	22.6	35.6	76	1966	31	43.2	1972	-7+	1962	11	29.7	1980	911	0	.0	.0	14.0	.8	29.6	.1
Apr	58.1	27.8	43.0	81	1981	30	49.8	1992	1	1975	7	35.2	1975	661	0	.0	.0	23.8	.1	23.2	.0
May	68.0	34.4	51.2	88	1986	30	56.6	1984	9	1975	6	46.3	1977	429	1	.0	.0	30.3	.0	11.2	.0
Jun	78.6	41.9	60.3	95+	1961	23	65.0	1974	23	1955	2	55.0	1993	174	31	.0	1.0	30.0	.0	1.7	.0
Jul	84.0	49.2	66.6	99	1996	5	69.9	1996	25	1948	1	60.8	1993	45	93	.0	3.3	31.0	.0	.0	.0
Aug	81.7	48.4	65.1	94+	1954	1	68.7	1994	32+	1942	30	62.2	1976	60	60	.0	1.4	31.0	.0	@	.0
Sep	74.9	41.4	58.2	91+	1955	6	62.0	1979	20	1965	18	53.4	1986	211	5	.0	.0	29.9	.0	2.3	.0
Oct	64.2	32.6	48.4	83+	1964	3	54.7	1988	-2	1971	30	43.2	1984	516	0	.0	.0	27.6	.2	14.7	.0
Nov	50.2	22.6	36.4	73	1954	24	42.7	1995	-5	1931	23	29.3	1994	858	0	.0	.0	15.4	1.6	28.0	.2
Dec	42.1	16.8	29.5	67	1962	9	37.8	1980	-24	1990	22	21.0	1990	1103	0	.0	.0	6.1	4.8	30.7	1.2
Ann	61.1	31.0	46.1	99	Jul 1996	5	69.9	Jul 1996	-24	Dec 1990	22	20.0	Jan 1979	7086	190	.0	5.7	251.6	16.9	199.9	4.2

\+ 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: 1928-2001

(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	1.76	1.11	2.28	1969	25	7.32	1993	.00+	1976
Feb	1.90	1.90	1.96	1976	9	5.88	1993	.00	1972
Mar	1.75	1.79	3.55	1938	3	4.38	1978	.00	1997
Apr	.95	.80	1.10	1974	2	3.90	1988	.02+	1993
May	.97	.90	1.85	1934	28	2.96	1992	.02	1972
Jun	.51	.36	1.72	1952	26	1.61	1972	.00+	1979
Jul	1.34	1.29	1.78	1966	22	3.18	1999	.00	1993
Aug	1.62	1.50	2.05	1951	29	3.59	1987	.00	1985
Sep	1.53	1.26	2.40	1972	19	5.21	1997	.03	1989
Oct	1.59	1.12	1.51	1936	19	4.93	2000	.00+	1999
Nov	1.40	.98	3.32	1987	2	5.72	1978	.11	1980
Dec	1.19	.69	3.21	1966	6	4.85	1971	.00	1989
Ann	16.51	15.12	3.55	Mar 1938	3	7.32	Jan 1993	.00+	Oct 1999

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	6.0	4.3	1.2	.3
Feb	6.4	4.3	1.2	.4
Mar	7.4	4.8	.9	.2
Apr	4.9	2.8	.5	.1
May	5.0	2.8	.6	.1
Jun	3.0	1.6	.1	.1
Jul	6.5	3.8	.8	@
Aug	8.6	4.5	.8	.1
Sep	6.0	3.6	.8	.3
Oct	5.1	3.5	1.2	.2
Nov	4.4	2.9	1.0	.3
Dec	4.8	3.1	.6	.2
Ann	68.1	42.0	9.7	2.3

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	.00	.17	.48	.75	1.05	1.37	1.74	2.19	2.81	3.83	4.82
Feb	.05	.18	.43	.70	1.01	1.36	1.78	2.31	3.06	4.32	5.57
Mar	.05	.17	.40	.65	.93	1.25	1.64	2.13	2.82	3.97	5.12
Apr	.03	.08	.18	.30	.45	.62	.84	1.13	1.54	2.25	2.97
May	.07	.13	.25	.38	.53	.70	.91	1.17	1.54	2.16	2.78
Jun	.00	.00	.05	.11	.19	.30	.43	.60	.85	1.28	1.72
Jul	.08	.21	.42	.62	.83	1.06	1.32	1.65	2.09	2.82	3.53
Aug	.21	.42	.69	.92	1.15	1.39	1.67	1.99	2.42	3.10	3.75
Sep	.07	.15	.32	.52	.76	1.04	1.39	1.84	2.48	3.57	4.67
Oct	.00	.14	.40	.65	.92	1.21	1.56	1.97	2.55	3.51	4.44
Nov	.07	.15	.32	.51	.72	.98	1.29	1.69	2.25	3.21	4.17
Dec	.01	.07	.20	.36	.55	.77	1.06	1.42	1.95	2.85	3.77
Ann	10.48	11.59	13.05	14.17	15.18	16.16	17.19	18.34	19.74	21.80	23.61

\+ 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: 1928-2001
(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	18.6	17.2	9	6
Feb	18.0	13.5	11	6
Mar	14.9	10.3	7	3
Apr	5.3	2.0	2	#
May	.5	.0	#	0
Jun	.4	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.0	.0	0	0
Oct	1.4	.0	#	0
Nov	8.2	5.5	1	#
Dec	12.1	6.7	3	1
Ann	79.4	55.2	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	21.1	1980	29	52.5	1979	44	1993	18	33	1993
Feb	21.0	1989	4	47.2	1998	54	1993	24	44	1993
Mar	15.0	1991	1	56.7	1991	50	1993	1	34	1993
Apr	10.2	1988	21	20.4	1999	34	1973	1	14	1973
May	3.0	1981	16	3.0	1981	2	1980	2	#	1980
Jun	6.5	1993	6	6.5	1993	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	6.0	1971	28	7.0	1996	6	1971	28	#+	2000
Nov	18.5	1994	18	41.7	1982	19	1994	18	6	1982
Dec	14.5	1992	28	54.5	1984	31	1984	27	14	1982
Ann	21.1	Jan 1980	29	56.7	Mar 1991	54	Feb 1993	24	44	Feb 1993

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	5.4	4.7	3.1	1.9	.4
Feb	5.0	4.3	2.5	1.7	.3
Mar	4.6	3.9	2.5	1.5	.2
Apr	2.0	1.5	.8	.2	@
May	.4	.2	@	.0	.0
Jun	.1	.1	.1	.1	.0
Jul	.0	.0	.0	.0	.0
Aug	.0	.0	.0	.0	.0
Sep	.0	.0	.0	.0	.0
Oct	.9	.6	.2	.1	.0
Nov	2.5	2.2	1.1	.5	.1
Dec	3.6	3.1	1.7	1.0	.3
Ann	24.5	20.6	12.0	7.0	1.3

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	19.6	17.8	15.7	10.8
Feb	18.4	16.6	14.7	11.9
Mar	13.5	12.0	10.1	6.1
Apr	4.0	2.9	2.5	1.8
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	.4	.1	@	.0
Nov	5.4	3.9	2.6	.6
Dec	8.6	5.5	2.7	2.0
Ann	69.9	58.8	48.3	33.2

+ 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	7/03	6/28	6/24	6/21	6/18	6/14	6/11	6/07	6/02
32	6/21	6/16	6/13	6/09	6/07	6/04	6/01	5/28	5/23
28	6/09	6/03	5/30	5/26	5/23	5/19	5/16	5/11	5/05
24	5/26	5/19	5/14	5/10	5/06	5/02	4/28	4/23	4/17
20	5/09	5/02	4/27	4/23	4/19	4/15	4/11	4/06	3/30
16	4/25	4/17	4/11	4/06	4/01	3/27	3/22	3/16	3/07

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

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	108	100	94	90	85	81	76	70	62
32	130	122	117	113	109	105	100	95	88
28	156	149	143	139	134	130	125	120	112
24	195	185	178	171	166	160	153	146	136
20	218	209	203	197	192	187	182	175	167
16	249	239	232	226	220	214	208	201	191

***** 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)

Base	Heating Degree Days (1)												
Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	1152	966	911	661	429	174	45	60	211	516	858	1103	7086
60	997	826	756	515	286	83	8	10	94	367	708	948	5598
57	904	742	663	431	208	46	2	2	48	283	618	855	4802
55	842	686	602	376	164	29	0	0	28	233	559	793	4312
50	687	546	455	251	79	7	0	0	5	128	413	638	3209
32	188	125	76	20	0	0	0	0	0	2	54	172	637

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	59	84	189	348	595	847	1071	1023	784	509	186	92	5787
55	0	0	1	14	46	186	359	310	122	27	0	0	1065
57	0	0	0	9	28	143	298	250	82	15	0	0	825
60	0	0	0	3	12	90	212	165	37	6	0	0	525
65	0	0	0	0	1	31	93	60	5	0	0	0	190
70	0	0	0	0	0	7	24	10	0	0	0	0	41

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	12	46	156	359	613	826	776	538	274	50	1	0	12	58	214	573	1186	2012	2788	3326	3600	3650	3651
45	0	0	5	70	218	464	671	621	390	151	11	0	0	0	5	75	293	757	1428	2049	2439	2590	2601	2601
50	0	0	0	21	107	317	516	466	250	60	0	0	0	0	0	21	128	445	961	1427	1677	1737	1737	1737
55	0	0	0	1	30	181	361	311	123	14	0	0	0	0	0	1	31	212	573	884	1007	1021	1021	1021
60	0	0	0	0	5	74	208	163	35	0	0	0	0	0	0	0	5	79	287	450	485	485	485	485
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	10	21	57	156	287	431	531	502	373	225	65	13	10	31	88	244	531	962	1493	1995	2368	2593	2658	2671

(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