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: DUGWAY, UT **COOP ID: 422257**

Climate Division: UT 1 **NWS Call Sign:** **Elevation: 4,340 Feet** **Lat: 40˚11N** **Lon: 112˚55W**

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	39.7	14.1	26.9	66	1953	10	36.6	1998	-25	1984	18	16.4	1984	1181	0	.0	.0	4.3	9.6	29.2	4.3
Feb	47.0	21.2	34.1	71+	1972	28	42.3	1986	-29	1989	7	19.4	1984	865	0	.0	.0	10.4	3.2	24.5	1.2
Mar	55.9	28.2	42.1	80+	1956	24	47.9	1986	-6	1952	3	35.2	1977	711	0	.0	.0	21.7	.2	21.3	.0
Apr	64.4	34.3	49.4	88+	1977	23	56.4	1992	11	1997	6	41.6	1975	474	4	.0	.0	26.6	.0	11.7	.0
May	74.8	43.0	58.9	99	1997	31	63.1	1992	21+	1972	1	53.4	1975	221	31	.0	1.3	30.5	.0	2.0	.0
Jun	87.1	52.0	69.6	107	1954	23	74.6	1986	31+	1954	2	63.7	1995	50	186	1.8	12.5	30.0	.0	.1	.0
Jul	96.0	59.5	77.8	109+	1989	19	81.1	1985	37	1968	1	70.8	1993	1	397	7.0	25.6	31.0	.0	.0	.0
Aug	93.9	57.7	75.8	108	1972	11	80.0	1986	33+	1992	26	71.9	1993	2	336	3.7	22.8	31.0	.0	.0	.0
Sep	82.4	46.7	64.6	102+	1990	12	70.1	1979	22	1970	26	60.3	1971	95	83	.1	6.7	29.9	.0	1.5	.0
Oct	68.1	34.3	51.2	91+	1996	9	57.2	1988	9	1971	30	47.7	1984	429	1	.0	.1	28.6	.1	12.2	.0
Nov	52.2	24.5	38.4	78	1973	12	43.9	1981	-8	1952	27	31.1	1993	800	0	.0	.0	15.3	.9	25.1	.1
Dec	41.4	15.4	28.4	69	1995	1	36.3	1973	-27	1990	23	17.2	1990	1134	0	.0	.0	5.2	7.3	29.2	2.4
Ann	66.9	35.9	51.4	109+	Jul 1989	19	81.1	Jul 1985	-29	Feb 1989	7	16.4	Jan 1984	5963	1038	12.6	69.0	264.5	21.3	156.8	8.0

\+ 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: 1950-2001

(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	.60	.55	1.00	2001	1	1.54	1980	.03	1994
Feb	.66	.68	.84	1958	25	1.63	1998	.03	1975
Mar	.95	.89	1.34	1986	8	2.44	1986	.10	1971
Apr	.82	.80	.95	1969	15	2.14	1986	.04	1992
May	1.19	1.07	1.24	1994	31	2.96	1982	.02	1972
Jun	.50	.28	.95	1997	15	2.64	1997	.00+	1996
Jul	.56	.34	1.11	1983	31	1.89	1983	.00	1971
Aug	.63	.46	1.46	1988	6	2.21	2000	.00	1996
Sep	.72	.59	1.17	1961	17	3.16	1982	.00+	1979
Oct	.89	.85	1.02	1961	9	2.00	1981	.00	1999
Nov	.62	.45	.95	1963	15	1.86	1973	.03	1977
Dec	.49	.41	1.01	1959	31	2.33	1983	.00+	1986
Ann	8.63	8.42	1.46	Aug 1988	6	3.16	Sep 1982	.00+	Oct 1999

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	6.5	2.3	.1	.0
Feb	6.0	2.4	.1	.0
Mar	7.2	3.4	.3	.1
Apr	6.4	2.5	.2	.0
May	6.9	3.5	.5	@
Jun	3.0	1.5	.2	.0
Jul	3.9	1.6	.2	@
Aug	3.7	1.6	.3	.1
Sep	4.3	2.4	.3	@
Oct	5.2	2.9	.4	.0
Nov	5.2	1.9	.2	.0
Dec	5.0	1.6	.1	.0
Ann	63.3	27.6	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	.07	.12	.20	.28	.37	.47	.59	.73	.92	1.24	1.55
Feb	.06	.11	.20	.29	.39	.50	.63	.80	1.03	1.41	1.78
Mar	.11	.18	.31	.45	.59	.75	.93	1.16	1.48	2.00	2.50
Apr	.07	.12	.23	.34	.47	.61	.78	1.00	1.30	1.80	2.29
May	.21	.32	.49	.65	.82	1.00	1.20	1.45	1.78	2.32	2.83
Jun	.00	.00	.01	.08	.16	.27	.41	.59	.86	1.34	1.83
Jul	.01	.03	.08	.16	.24	.35	.48	.66	.92	1.37	1.82
Aug	.02	.06	.14	.23	.33	.45	.59	.77	1.02	1.43	1.85
Sep	.00	.11	.25	.37	.48	.60	.74	.90	1.12	1.47	1.81
Oct	.03	.10	.23	.36	.50	.66	.85	1.09	1.42	1.98	2.52
Nov	.05	.09	.17	.26	.35	.46	.59	.75	.97	1.34	1.70
Dec	.00	.03	.10	.17	.25	.35	.46	.60	.80	1.14	1.48
Ann	4.58	5.28	6.22	6.97	7.65	8.33	9.04	9.85	10.86	12.37	13.71

\+ 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: 1950-2001
(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	4.0	3.0	1	#
Feb	2.2	1.5	1	#
Mar	2.1	1.7	#	0
Apr	.7	.0	#	0
May	.1	.0	#	0
Jun	.0	.0	0	0
Jul	.0	.0	#	0
Aug	.0	.0	0	0
Sep	#	.0	0	0
Oct	.1	.0	#	0
Nov	1.5	.5	#	0
Dec	2.9	2.2	#	#
Ann	13.6	8.9	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	7.0	1980	29	13.9	1993	13	1993	14	9	1993
Feb	4.0	1979	23	8.3	1979	10	1993	10	9	1993
Mar	4.7	1977	2	10.5	1998	6	1993	1	1	1993
Apr	5.2	1997	9	5.2	1997	3	1997	9	#+	1998
May	1.0	1975	6	1.0	1975	#+	1999	4	#+	1999
Jun	.0	0	0	.0	0	0	0	0	0	0
Jul	.0	0	0	.0	0	#	1984	9	#	1984
Aug	.0	0	0	.0	0	0	0	0	0	0
Sep	#	1978	19	#+	1978	0	0	0	0	0
Oct	1.0	1971	28	1.5	1984	1	1984	16	#	1984
Nov	4.3	1985	11	8.8	1985	1	1994	28	#+	1996
Dec	6.5	1982	1	10.0	1985	12	1983	27	2	1983
Ann	7.0	Jan 1980	29	13.9	Jan 1993	13	Jan 1993	14	9+	Feb 1993

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	3.5	1.5	.2	.1	.0
Feb	2.3	1.0	.2	.0	.0
Mar	1.7	1.0	.1	.0	.0
Apr	.7	.2	@	@	.0
May	.1	@	.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	.2	@	.0	.0	.0
Nov	1.5	.6	.1	.0	.0
Dec	2.6	1.2	.3	@	.0
Ann	12.6	5.5	.9	.1	.0

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	2.4	.2	.1	.0
Feb	.8	.1	.0	.0
Mar	.9	.4	.3	.0
Apr	@	@	.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	.0	.0	.0	.0
Dec	1.9	.5	.4	.2
Ann	6.0	1.2	.8	.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	6/14	6/08	6/04	6/01	5/28	5/25	5/21	5/17	5/11
32	5/28	5/23	5/19	5/15	5/12	5/09	5/06	5/02	4/26
28	5/10	5/05	5/02	4/29	4/27	4/24	4/21	4/18	4/14
24	5/09	4/29	4/22	4/16	4/10	4/05	3/30	3/23	3/13
20	4/21	4/11	4/05	3/30	3/25	3/20	3/14	3/07	2/26
16	4/13	4/02	3/24	3/17	3/11	3/04	2/25	2/17	2/06

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

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	131	125	121	117	114	111	107	103	98
32	158	151	146	142	138	134	130	125	118
28	190	183	178	173	169	165	161	156	149
24	234	221	211	203	196	188	180	171	158
20	259	247	238	231	224	217	209	201	189
16	286	273	263	255	248	240	232	222	209

***** 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	1181	865	711	474	221	50	1	2	95	429	800	1134	5963
60	1026	725	557	336	119	17	0	0	36	281	650	979	4726
57	933	641	466	261	74	7	0	0	16	202	560	886	4046
55	876	587	408	217	51	4	0	0	8	155	501	824	3631
50	731	458	270	126	16	0	0	0	1	67	360	669	2698
32	290	112	16	2	0	0	0	0	0	0	41	204	665

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	132	172	327	523	833	1126	1419	1357	978	595	231	93	7786
55	5	2	6	47	171	440	706	644	296	37	1	0	2355
57	0	0	2	32	132	383	644	582	244	21	0	0	2040
60	0	0	0	17	83	303	551	489	174	8	0	0	1625
65	0	0	0	4	31	186	397	336	83	1	0	0	1038
70	0	0	0	0	7	99	250	194	30	0	0	0	580

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	10	42	134	298	578	884	1168	1107	731	348	72	13	10	52	186	484	1062	1946	3114	4221	4952	5300	5372	5385
45	0	11	59	182	425	734	1013	952	581	216	25	3	0	11	70	252	677	1411	2424	3376	3957	4173	4198	4201
50	0	0	20	96	288	585	858	797	436	111	7	0	0	0	20	116	404	989	1847	2644	3080	3191	3198	3198
55	0	0	3	41	170	437	703	642	299	45	0	0	0	0	3	44	214	651	1354	1996	2295	2340	2340	2340
60	0	0	0	16	79	301	548	487	183	10	0	0	0	0	0	16	95	396	944	1431	1614	1624	1624	1624
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	8	39	111	218	377	555	718	690	481	267	72	12	8	47	158	376	753	1308	2026	2716	3197	3464	3536	3548

(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