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: HOVENWEEP NM, UT **COOP ID: 424100**

Climate Division: UT 7 **NWS Call Sign:** **Elevation: 5,240 Feet** **Lat: 37˚23N** **Lon: 109˚05W**

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	41.0	15.2	28.1	65	1971	31	34.7	1993	-21	1963	13	18.3	1973	1144	0	.0	.0	5.9	4.6	30.2	3.1
Feb	48.2	21.3	34.8	69+	1995	21	40.6	1995	-15	1982	6	25.6	1974	847	0	.0	.0	13.5	1.0	26.0	.5
Mar	57.6	27.6	42.6	81	1989	10	46.9	1989	2	1966	4	39.3	1980	695	0	.0	.0	26.3	.0	24.9	.0
Apr	66.1	32.7	49.4	88+	1981	30	54.2+	1992	12	1974	13	44.0	1983	469	0	.0	.0	28.5	.0	16.7	.0
May	76.7	41.6	59.2	99	2000	30	64.2	1984	19	1967	1	54.7	1995	201	20	.0	1.0	31.0	.0	4.1	.0
Jun	88.6	49.7	69.2	104	1998	29	73.4	1974	26	1970	12	65.2	1975	38	162	1.2	16.5	30.0	.0	.1	.0
Jul	93.7	57.8	75.8	106+	1998	15	79.2	1998	39	1997	2	72.5	1992	0	334	3.8	26.3	31.0	.0	.0	.0
Aug	90.9	56.9	73.9	105	1962	15	77.7	1994	36+	1980	21	71.2	1979	2	278	1.1	22.4	31.0	.0	.0	.0
Sep	82.4	47.7	65.1	97+	1963	23	69.3	1998	22	1978	21	61.1	1985	73	75	.0	5.5	30.0	.0	.6	.0
Oct	69.6	35.8	52.7	90	1963	1	57.4	1988	11	1975	24	48.2	1984	385	2	.0	.0	29.9	.0	12.6	.0
Nov	53.3	24.8	39.1	77	1976	3	42.7	1977	-1	1976	29	33.4	2000	779	0	.0	.0	20.0	.1	25.8	.1
Dec	42.4	16.3	29.4	66	1999	2	36.6	1980	-24	1990	24	20.0	1990	1106	0	.0	.0	6.2	3.1	30.1	1.6
Ann	67.5	35.6	51.6	106+	Jul 1998	15	79.2	Jul 1998	-24	Dec 1990	24	18.3	Jan 1973	5739	871	6.1	71.7	283.3	8.8	171.1	5.3

\+ 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: 1957-2001

(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	1.10	.89	1.04	1993	8	3.78	1993	.00	1972
Feb	1.07	.67	1.59	1993	20	3.21	1993	.00	1972
Mar	1.19	.70	1.07	1995	6	3.08	1983	.06	1997
Apr	.85	.55	1.27	1959	9	2.83	1994	.00	1989
May	.77	.67	.81	1987	13	2.46	1992	.00	1972
Jun	.33	.18	.83	1979	3	1.62	1973	.00+	1998
Jul	1.01	.85	1.36	1969	19	2.39	1981	.00	1993
Aug	.97	.88	1.63	2001	14	3.19	1987	.00	1998
Sep	.98	.85	2.03	1970	5	2.82	1985	.00+	1998
Oct	1.46	1.18	2.19	1996	3	6.85	1972	.00+	1999
Nov	1.19	1.12	1.35	1982	9	2.47	1996	.00+	2000
Dec	.91	.99	1.00	1960	4	2.90	1978	.00+	1999
Ann	11.83	11.18	2.19	Oct 1996	3	6.85	Oct 1972	.00+	Nov 2000

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	5.8	3.3	.5	@
Feb	4.9	3.2	.5	.1
Mar	6.6	3.7	.6	@
Apr	5.0	2.5	.4	@
May	5.2	2.2	.4	.0
Jun	2.5	.9	.1	.0
Jul	5.9	3.0	.5	@
Aug	6.3	2.7	.5	@
Sep	5.5	2.9	.5	.0
Oct	5.5	3.6	.7	.2
Nov	5.7	3.3	.7	.1
Dec	5.2	2.5	.4	.0
Ann	64.1	33.8	5.8	.4

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	.12	.28	.44	.62	.82	1.05	1.35	1.77	2.46	3.14
Feb	.03	.10	.24	.40	.57	.76	1.00	1.30	1.73	2.44	3.14
Mar	.04	.10	.23	.38	.56	.78	1.06	1.42	1.93	2.82	3.72
Apr	.02	.06	.17	.29	.42	.58	.78	1.03	1.39	1.99	2.60
May	.02	.08	.18	.29	.42	.56	.72	.94	1.24	1.74	2.23
Jun	.00	.00	.00	.03	.08	.15	.24	.37	.57	.92	1.28
Jul	.08	.19	.36	.50	.66	.82	1.01	1.25	1.56	2.06	2.55
Aug	.04	.12	.27	.41	.56	.74	.94	1.20	1.55	2.13	2.70
Sep	.00	.00	.39	.56	.71	.87	1.05	1.25	1.50	1.92	2.30
Oct	.00	.11	.35	.58	.82	1.09	1.42	1.81	2.36	3.28	4.17
Nov	.00	.12	.33	.52	.71	.93	1.18	1.48	1.90	2.59	3.26
Dec	.00	.05	.18	.32	.47	.65	.86	1.12	1.49	2.11	2.73
Ann	7.33	8.16	9.24	10.08	10.84	11.59	12.36	13.23	14.30	15.87	17.24

\+ 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: 1957-2001
(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	6.4	5.4	2	1
Feb	3.6	3.8	1	#
Mar	1.9	.9	#	0
Apr	.8	.0	#	0
May	.2	.0	0	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.0	.0	0	0
Oct	.6	.0	#	0
Nov	1.9	.5	#	0
Dec	4.6	1.5	1	#
Ann	20.0	12.1	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	14.0	1997	14	24.2	1974	13	1973	17	10	1973
Feb	6.5	1992	16	11.5	1982	12	1979	1	7	1979
Mar	4.5	1986	17	9.6	1980	5	1986	17	#+	1996
Apr	3.0	1978	9	5.2	1983	2	1999	1	#+	1999
May	3.1	1978	6	3.1	1978	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	10.0	1997	25	10.0	1997	#	1996	20	#	1996
Nov	4.0	1972	20	10.9	1973	4	1996	30	1	1973
Dec	6.5	1972	5	20.0+	1992	12	1990	21	5	1992
Ann	14.0	Jan 1997	14	24.2	Jan 1974	13	Jan 1973	17	10	Jan 1973

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	3.8	2.5	.8	.1	@
Feb	1.8	1.3	.6	.1	.0
Mar	1.1	.8	.2	.0	.0
Apr	.8	.4	@	.0	.0
May	.1	.1	@	.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	.2	@	@	@
Nov	1.1	.8	.2	.0	.0
Dec	2.4	1.7	.7	.3	.0
Ann	11.3	7.8	2.5	.5	@

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	12.1	7.0	4.3	1.3
Feb	5.4	3.3	2.2	.7
Mar	.2	.1	@	.0
Apr	.1	.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	.9	.2	.0	.0
Dec	5.2	3.3	2.0	.1
Ann	23.9	13.9	8.5	2.1

+ 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	6/17	6/12	6/09	6/06	6/03	6/01	5/29	5/25	5/21
32	5/29	5/25	5/22	5/19	5/17	5/14	5/12	5/09	5/05
28	5/22	5/16	5/11	5/07	5/04	4/30	4/26	4/22	4/16
24	5/11	5/04	4/29	4/24	4/20	4/16	4/11	4/06	3/30
20	4/29	4/21	4/15	4/10	4/06	4/01	3/27	3/22	3/14
16	4/13	4/05	3/30	3/25	3/21	3/16	3/11	3/06	2/26

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

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	133	126	121	116	112	108	104	99	92
32	160	153	148	144	140	136	132	127	120
28	184	176	171	166	161	156	152	146	138
24	214	205	199	193	188	183	177	170	161
20	241	231	224	218	212	206	199	192	182
16	263	255	249	244	239	234	229	223	214

***** 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	1144	847	695	469	201	38	0	2	73	385	779	1106	5739
60	989	707	540	326	94	9	0	0	22	242	629	951	4509
57	896	623	447	247	52	3	0	0	8	168	539	858	3841
55	834	567	386	199	33	1	0	0	4	126	479	796	3425
50	679	427	239	103	7	0	0	0	0	50	332	641	2478
32	219	63	2	0	0	0	0	0	0	0	21	172	477

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	98	140	330	522	842	1114	1357	1300	992	640	233	89	7657
55	0	0	1	30	161	426	644	587	306	53	0	0	2208
57	0	0	0	18	119	368	582	525	250	33	0	0	1895
60	0	0	0	7	68	284	489	432	174	14	0	0	1468
65	0	0	0	0	20	162	334	278	75	2	0	0	871
70	0	0	0	0	3	74	184	139	21	0	0	0	421

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	3	36	135	310	594	877	1112	1057	761	395	76	1	3	39	174	484	1078	1955	3067	4124	4885	5280	5356	5357
45	0	6	49	188	441	727	957	902	611	256	20	0	0	6	55	243	684	1411	2368	3270	3881	4137	4157	4157
50	0	0	12	87	298	577	802	747	462	136	4	0	0	0	12	99	397	974	1776	2523	2985	3121	3125	3125
55	0	0	0	32	169	427	647	592	318	52	0	0	0	0	0	32	201	628	1275	1867	2185	2237	2237	2237
60	0	0	0	4	69	282	492	437	179	10	0	0	0	0	0	4	73	355	847	1284	1463	1473	1473	1473
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	10	54	154	274	433	555	676	660	506	321	95	8	10	64	218	492	925	1480	2156	2816	3322	3643	3738	3746

(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