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: CAPITOL REEF NATL PARK, UT **COOP ID: 421171**

Climate Division: UT 7 **NWS Call Sign:** **Elevation: 5,500 Feet** **Lat: 38˚18N** **Lon: 111˚16W**

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	38.0	17.8	27.9	69+	1971	20	37.3	1999	-9	1971	7	17.8	1973	1150	0	.0	.0	5.2	6.2	30.2	.5
Feb	45.2	24.1	34.7	71	1986	26	44.3	1995	-7	1989	6	26.2	1979	850	0	.0	.0	11.3	1.5	23.5	.2
Mar	54.9	31.3	43.1	79	1972	18	49.8	1972	10+	1969	9	36.7	1973	680	0	.0	.0	25.7	@	15.5	.0
Apr	63.4	38.5	51.0	89	1981	30	58.6	1992	18+	1973	8	42.4	1975	433	12	.0	.0	28.1	.0	6.1	.0
May	73.6	47.5	60.6	97+	2000	28	65.9	1984	28	1968	6	55.9	1980	183	46	.0	1.1	30.9	.0	.4	.0
Jun	84.8	57.1	71.0	104	1970	26	76.4	1994	35	1988	1	65.9	1995	30	209	1.0	12.5	30.0	.0	.0	.0
Jul	90.0	63.4	76.7	104	1985	5	80.1	1996	44	1968	1	73.8	1983	0	364	1.8	22.2	31.0	.0	.0	.0
Aug	87.0	61.8	74.4	102+	1969	6	77.3	1994	44	1968	23	71.2	1999	1	292	.5	15.5	31.0	.0	.0	.0
Sep	78.9	53.6	66.3	98	1977	7	71.2	1979	32	1978	21	62.1	1986	55	92	.0	4.2	30.0	.0	@	.0
Oct	65.7	42.3	54.0	91+	1979	2	60.9	1988	17	1971	30	47.6	1984	354	13	.0	.1	29.5	.0	2.9	.0
Nov	49.7	28.7	39.2	77+	1973	8	44.8	1999	5	1976	28	33.5	2000	774	0	.0	.0	17.4	.3	19.9	.0
Dec	39.5	19.9	29.7	69	1977	7	37.7	1980	-7	1990	24	21.5	1978	1094	0	.0	.0	4.8	3.8	29.8	.1
Ann	64.2	40.5	52.4	104+	Jul 1985	5	80.1	Jul 1996	-9	Jan 1971	7	17.8	Jan 1973	5604	1028	3.3	55.6	274.9	11.8	128.3	.8

\+ 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: 1967-2001

(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	.52	.25	1.12	1980	19	2.32	1993	.00+	1998
Feb	.38	.19	.90	1971	20	2.13	1993	.00+	1997
Mar	.64	.40	1.45	1983	4	2.25	1981	.00+	1999
Apr	.52	.34	1.30	1997	3	2.07	1997	.00+	2000
May	.64	.53	.85	1989	14	2.08	1992	.00	1974
Jun	.37	.32	1.14	1969	17	1.52	1984	.00+	1978
Jul	.95	.71	1.39	1985	17	2.81	1985	.09	1979
Aug	1.19	1.07	1.26	1984	20	3.28	1982	.09	1978
Sep	.83	.60	1.73	1980	10	3.21	1997	.00	1979
Oct	.76	.57	1.23	1972	19	2.94	2000	.00+	1999
Nov	.61	.30	1.68	1972	12	2.84	1978	.00+	1999
Dec	.27	.15	.90	1986	20	1.42	1986	.00+	1989
Ann	7.68	7.28	1.73	Sep 1980	10	3.28	Aug 1982	.00+	Apr 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	3.5	1.3	.3	@
Feb	3.1	1.0	.2	.0
Mar	4.1	1.8	.3	@
Apr	4.5	1.7	.1	@
May	5.2	2.0	.2	.0
Jun	3.3	1.2	.1	@
Jul	6.9	3.1	.3	@
Aug	7.8	3.6	.4	.1
Sep	5.4	2.3	.4	@
Oct	4.7	2.4	.2	@
Nov	3.2	1.7	.3	@
Dec	2.7	.8	.1	.0
Ann	54.4	22.9	2.9	.1

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	.00	.02	.08	.17	.27	.41	.60	.88	1.37	1.88
Feb	.00	.00	.05	.10	.16	.24	.34	.46	.64	.95	1.25
Mar	.00	.00	.09	.21	.32	.46	.61	.81	1.08	1.51	1.95
Apr	.00	.00	.08	.16	.25	.36	.48	.64	.86	1.24	1.61
May	.02	.06	.14	.23	.33	.45	.60	.78	1.03	1.47	1.90
Jun	.00	.01	.05	.10	.16	.24	.33	.44	.61	.90	1.20
Jul	.11	.18	.32	.45	.59	.75	.93	1.16	1.47	1.98	2.47
Aug	.15	.24	.41	.57	.75	.95	1.17	1.46	1.84	2.47	3.08
Sep	.02	.08	.19	.31	.44	.59	.78	1.01	1.34	1.89	2.44
Oct	.00	.00	.09	.20	.33	.49	.68	.92	1.27	1.87	2.47
Nov	.00	.01	.07	.15	.25	.37	.52	.72	1.01	1.51	2.02
Dec	.00	.00	.03	.07	.12	.18	.24	.33	.45	.65	.84
Ann	4.32	4.91	5.70	6.32	6.89	7.45	8.03	8.69	9.51	10.73	11.81

\+ 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: 1967-2001
(3) Derived from 1971-2000 serially complete daily data

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Snow (inches)

Snow Totals

Means/Medians (1)

Extremes (2)

Mean Number of Days (1)

Snow Fall >= Thresholds

Snow Depth >= Thresholds

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median	Highest Daily Snow Fall	Year	Day	Highest Monthly Snow Fall	Year	Highest Daily Snow Depth	Year	Day	Highest Monthly Mean Snow Depth	Year	0.1	1.0	3.0	5.0	10.0	1	3	5	10
Jan	5.6	2.0	1	#	14.0	1993	31	23.3	1982	24	1997	14	4	1992	2.3	1.6	.5	.3	.1	6.3	3.7	1.8	.1
Feb	2.1	.6	1	#	10.0	1971	20	13.2	1975	12	1993	1	4	1979	.8	.4	.2	.1	@	2.7	1.2	.6	.0
Mar	3.0	1.0	#	0	14.0	1985	28	14.7	1985	7	1995	29	#+	1998	1.0	.8	.4	.1	@	.3	.1	.1	.0
Apr	.5	.0	#	0	4.0	1997	3	5.5	1975	2	1999	4	#+	1999	.5	.3	.1	.0	.0	.1	.0	.0	.0
May	.1	.0	#	0	2.5	1979	8	2.5	1979	#	1982	11	#	1982	.1	@	.0	.0	.0	.0	.0	.0	.0
Jun	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Jul	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Aug	.0	.0	#	0	.0	0	0	.0	0	#+	1996	2	#+	1996	.0	.0	.0	.0	.0	.0	.0	.0	.0
Sep	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	.6	.0	#	0	10.1	1971	29	10.1	1971	5	1971	29	#+	2000	.1	.1	.1	@	@	.1	@	@	.0
Nov	2.2	.5	#	#	8.5	1972	12	13.7	1972	5	1975	28	1	1994	.8	.7	.3	.1	.0	1.3	.4	@	.0
Dec	2.2	1.0	#	#	6.0	1984	20	8.2	1979	6	1979	27	1	1983	1.6	.9	.2	.1	.0	1.3	.3	.2	.0
Ann	16.3	5.1	N/A	N/A	14.0+	Jan 1993	31	23.3	Jan 1982	24	Jan 1997	14	4+	Jan 1992	7.2	4.8	1.8	.7	.1	12.1	5.7	2.7	.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	6/02	5/25	5/20	5/15	5/11	5/06	5/02	4/26	4/19
32	5/16	5/08	5/03	4/28	4/24	4/19	4/14	4/09	4/01
28	4/25	4/18	4/13	4/08	4/04	3/31	3/26	3/21	3/14
24	4/10	4/02	3/28	3/23	3/19	3/14	3/09	3/04	2/24
20	3/29	3/20	3/13	3/08	3/02	2/25	2/20	2/13	2/04
16	3/09	2/28	2/21	2/15	2/10	2/05	1/30	1/24	1/15

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	9/29	10/04	10/08	10/11	10/14	10/18	10/21	10/25	10/30
32	10/10	10/15	10/19	10/22	10/25	10/27	10/30	11/03	11/08
28	10/23	10/28	10/31	11/03	11/05	11/08	11/11	11/14	11/19
24	10/31	11/04	11/07	11/09	11/12	11/14	11/17	11/20	11/24
20	11/07	11/12	11/15	11/18	11/21	11/24	11/27	11/30	12/05
16	11/15	11/23	11/29	12/03	12/08	12/13	12/18	12/24	1/01

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	183	174	167	161	156	151	145	138	129
32	211	201	194	189	183	178	172	165	156
28	240	232	225	220	215	210	204	198	189
24	266	256	249	243	238	232	226	219	209
20	293	282	275	269	263	257	250	243	233
16	331	321	313	306	300	294	288	280	269

***** 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	1150	850	680	433	183	30	0	1	55	354	774	1094	5604
60	995	710	530	303	93	8	0	0	15	229	624	939	4446
57	902	626	444	236	56	3	0	0	6	166	535	846	3820
55	840	570	389	197	38	1	0	0	3	130	476	784	3428
50	692	438	264	116	11	0	0	0	0	64	336	629	2550
32	239	87	22	4	0	0	0	0	0	0	31	170	553

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	113	162	366	572	886	1169	1387	1315	1028	682	247	99	8026
55	0	0	20	75	211	480	674	602	340	99	3	0	2504
57	0	0	13	54	167	422	612	540	283	73	1	0	2165
60	0	0	6	31	111	337	519	447	203	43	0	0	1697
65	0	0	0	12	46	209	364	292	92	13	0	0	1028
70	0	0	0	2	14	110	212	150	26	2	0	0	516

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	9	51	196	391	682	971	1180	1108	831	494	112	9	9	60	256	647	1329	2300	3480	4588	5419	5913	6025	6034
45	0	16	95	259	528	821	1025	953	681	346	46	0	0	16	111	370	898	1719	2744	3697	4378	4724	4770	4770
50	0	1	38	148	379	671	870	798	531	221	15	0	0	1	39	187	566	1237	2107	2905	3436	3657	3672	3672
55	0	0	7	71	244	521	715	643	384	122	0	0	0	0	7	78	322	843	1558	2201	2585	2707	2707	2707
60	0	0	0	24	128	373	560	488	247	50	0	0	0	0	0	24	152	525	1085	1573	1820	1870	1870	1870
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	10	39	142	257	433	624	766	738	535	303	79	8	10	49	191	448	881	1505	2271	3009	3544	3847	3926	3934

(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