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: CAVENDISH, VT **COOP ID: 431243**

Climate Division: VT 3 **NWS Call Sign:** **Elevation: 800 Feet** **Lat: 43˚23N** **Lon: 72˚36W**

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	28.6	4.3	16.5	65	1950	4	25.6	1990	-38	1957	14	6.5	1982	1505	0	.0	.0	.7	19.0	30.7	11.2
Feb	32.1	5.1	18.6	63	1957	26	26.9	1984	-32+	1971	1	9.1	1979	1299	0	.0	.0	1.4	13.7	27.6	9.6
Mar	41.3	17.6	29.5	80	1998	31	35.0	1973	-25	1950	4	23.4	1984	1103	0	.0	.0	5.9	5.0	28.5	2.6
Apr	53.9	29.5	41.7	91	1990	29	46.2	1986	0+	1964	1	35.7	1972	700	0	.0	.1	18.0	.2	19.1	.0
May	68.2	41.2	54.7	94	1962	19	59.6	1998	17	1956	9	49.5	1997	324	5	.0	.2	30.0	.0	5.3	.0
Jun	76.7	50.1	63.4	98	1974	10	67.6	1976	27	1958	7	59.6	1985	90	41	.0	1.0	30.0	.0	.4	.0
Jul	81.8	54.7	68.3	97+	1953	18	71.4	1995	33+	1957	3	64.6	1992	18	118	.0	2.8	31.0	.0	.0	.0
Aug	79.4	52.7	66.1	98	1948	26	70.4	1973	28+	1965	30	63.0	1987	44	77	.0	1.0	31.0	.0	.1	.0
Sep	70.3	44.4	57.4	95	1953	2	61.6	1999	18	1963	24	54.3	1995	235	5	.0	.1	30.0	.0	3.1	.0
Oct	58.7	31.9	45.3	88	1963	7	52.6	1971	9	1969	24	41.4	1974	612	0	.0	.0	24.6	.0	16.1	.0
Nov	45.6	24.9	35.3	78	1950	2	41.3	1999	-14	1956	28	31.3	1972	892	0	.0	.0	9.2	2.4	23.0	.1
Dec	33.6	12.4	23.0	71	1998	8	30.4	1998	-27	1951	28	6.2	1989	1302	0	.0	.0	1.3	13.5	29.7	4.9
Ann	55.9	30.7	43.3	98+	Jun 1974	10	71.4	Jul 1995	-38	Jan 1957	14	6.2	Dec 1989	8124	246	.0	5.2	213.1	53.8	183.6	28.4

\+ 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	3.76	3.59	2.16	1978	9	8.04	1978	.44	1981
Feb	2.79	2.60	1.62	1981	25	9.10	1981	.19	1987
Mar	3.81	4.01	2.50	2001	31	6.46	1999	.67	1981
Apr	3.96	3.72	3.10	1988	29	8.20	1996	.71	1999
May	4.19	3.76	3.01	1984	30	11.25	1984	1.35	1980
Jun	4.20	4.26	5.67	1973	30	12.25	1998	.67	1988
Jul	3.88	3.82	3.60	1973	4	7.23	1996	1.03	1983
Aug	4.14	3.77	4.19	1990	7	8.87	1990	.83	1996
Sep	3.82	3.17	5.34	1999	17	8.40	1999	1.39	1978
Oct	3.92	3.23	3.48	1995	22	9.93	1995	.62	1994
Nov	4.03	3.74	2.46	1950	26	7.23	1972	1.14	1976
Dec	3.57	3.13	2.62	1948	30	8.14	1973	1.42	1980
Ann	46.07	46.56	5.67	Jun 1973	30	12.25	Jun 1998	.19	Feb 1987

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	11.7	6.8	2.8	.8
Feb	10.0	5.6	2.0	.6
Mar	11.7	7.1	2.7	1.0
Apr	11.9	7.2	2.8	1.0
May	14.0	7.9	2.8	.9
Jun	13.8	7.7	2.5	1.0
Jul	12.8	7.5	2.5	.9
Aug	12.3	7.4	2.4	1.1
Sep	12.4	7.4	2.6	.8
Oct	12.0	6.4	2.3	1.2
Nov	12.4	7.4	3.0	1.1
Dec	12.4	7.1	2.4	.9
Ann	147.4	85.5	30.8	11.3

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	1.03	1.38	1.92	2.40	2.86	3.35	3.89	4.53	5.36	6.67	7.88
Feb	.78	1.05	1.45	1.80	2.14	2.50	2.90	3.36	3.97	4.92	5.81
Mar	1.57	1.92	2.41	2.81	3.19	3.58	3.99	4.47	5.08	6.00	6.84
Apr	1.45	1.82	2.35	2.80	3.23	3.67	4.15	4.70	5.40	6.49	7.49
May	1.29	1.68	2.28	2.79	3.28	3.79	4.36	5.02	5.88	7.21	8.45
Jun	.87	1.25	1.87	2.43	3.00	3.60	4.29	5.11	6.20	7.93	9.58
Jul	1.29	1.65	2.19	2.65	3.09	3.55	4.05	4.63	5.38	6.54	7.61
Aug	1.52	1.91	2.47	2.94	3.38	3.84	4.33	4.91	5.64	6.77	7.81
Sep	1.28	1.64	2.17	2.62	3.05	3.50	3.99	4.56	5.29	6.42	7.47
Oct	1.04	1.42	1.98	2.48	2.97	3.49	4.06	4.73	5.62	7.00	8.29
Nov	1.83	2.19	2.68	3.08	3.45	3.83	4.23	4.69	5.27	6.14	6.93
Dec	1.18	1.52	2.02	2.44	2.85	3.27	3.73	4.26	4.95	6.02	7.01
Ann	36.97	38.82	41.14	42.88	44.40	45.85	47.33	48.95	50.90	53.68	56.05

\+ 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	24.0	23.6	12	14
Feb	17.8	15.3	17	18
Mar	17.3	16.3	14	14
Apr	5.8	3.4	3	1
May	.0	.0	#	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	#	.0	0	0
Oct	.3	.0	#	0
Nov	6.1	4.3	1	#
Dec	18.9	17.3	6	4
Ann	90.2	80.2	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	18.5	1990	30	56.1	1987	41	1987	23	29	1987
Feb	20.0	1978	7	41.6	1993	44	1978	8	34	1987
Mar	24.0	1984	14	49.9	1971	47	1971	7	36	1971
Apr	18.0	1982	7	18.4	1982	32	1982	7	15	1971
May	.3	1977	9	.3+	1986	#+	1996	14	#+	1996
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	#	1985	13	#	1985	0	0	0	0	0
Oct	4.0	1987	5	4.4	1987	2	1987	5	#+	2000
Nov	13.0	1971	25	32.4	1971	17	1971	30	4	1997
Dec	12.6	1986	19	42.4	1972	25+	1978	26	18	1972
Ann	24.0	Mar 1984	14	56.1	Jan 1987	47	Mar 1971	7	36	Mar 1971

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	10.3	5.8	2.6	1.5	.4
Feb	8.7	4.7	2.1	1.1	.2
Mar	7.1	4.1	2.1	1.0	.2
Apr	2.5	1.4	.7	.4	.1
May	.1	.0	.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	.3	.1	@	.0	.0
Nov	4.1	2.1	.6	.3	@
Dec	8.6	4.9	2.4	1.1	.1
Ann	41.7	23.1	10.5	5.4	1.0

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	28.4	26.4	23.6	17.7
Feb	28.2	26.9	25.2	20.2
Mar	29.4	26.0	22.6	17.5
Apr	9.5	6.8	4.9	3.0
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	.1	.0	.0	.0
Nov	5.5	2.7	1.7	.3
Dec	24.9	17.6	13.0	6.7
Ann	126.0	106.4	91.0	65.4

+ 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	6/19	6/14	6/11	6/08	6/06	6/03	5/31	5/28	5/24
32	6/12	6/07	6/03	5/30	5/27	5/24	5/20	5/16	5/11
28	5/19	5/15	5/12	5/09	5/07	5/05	5/02	4/29	4/25
24	5/05	5/01	4/29	4/26	4/24	4/22	4/20	4/17	4/13
20	4/21	4/17	4/14	4/11	4/09	4/07	4/04	4/01	3/28
16	4/14	4/10	4/06	4/04	4/01	3/30	3/27	3/24	3/20

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

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	113	106	101	96	93	89	84	79	73
32	136	129	123	119	114	110	105	100	93
28	165	159	155	151	148	145	141	137	132
24	189	184	180	177	174	170	167	163	158
20	225	218	213	208	204	200	196	190	183
16	250	241	235	230	225	220	215	209	200

***** 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	1505	1299	1103	700	324	90	18	44	235	612	892	1302	8124
60	1350	1159	948	550	192	25	1	6	115	457	742	1147	6692
57	1257	1075	855	462	128	8	0	1	65	368	652	1054	5925
55	1195	1019	793	404	94	3	0	0	41	310	592	992	5443
50	1040	879	638	268	36	0	0	0	10	183	443	837	4334
32	501	391	154	13	0	0	0	0	0	3	56	336	1454

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	19	16	74	303	704	941	1124	1056	760	414	154	57	5622
55	0	0	0	4	84	254	411	343	112	9	0	0	1217
57	0	0	0	2	57	199	349	282	75	4	0	0	968
60	0	0	0	0	28	126	256	194	36	1	0	0	641
65	0	0	0	0	5	41	118	77	5	0	0	0	246
70	0	0	0	0	0	6	32	16	0	0	0	0	54

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	0	16	126	462	704	873	815	525	215	55	3	0	0	16	142	604	1308	2181	2996	3521	3736	3791	3794
45	0	0	4	64	317	555	718	660	379	112	24	0	0	0	4	68	385	940	1658	2318	2697	2809	2833	2833
50	0	0	1	26	190	406	563	505	244	52	8	0	0	0	1	27	217	623	1186	1691	1935	1987	1995	1995
55	0	0	0	12	102	266	408	352	138	16	0	0	0	0	0	12	114	380	788	1140	1278	1294	1294	1294
60	0	0	0	1	42	147	257	206	64	0	0	0	0	0	0	1	43	190	447	653	717	717	717	717
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	0	0	17	104	298	445	570	519	325	152	34	1	0	0	17	121	419	864	1434	1953	2278	2430	2464	2465

(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