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: MEREDITH, CO **COOP ID: 055507**

Climate Division: CO 2 **NWS Call Sign:** **Elevation: 7,825 Feet** **Lat: 39˚22N** **Lon: 106˚45W**

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	32.8	1.2	17.0	57+	2001	7	23.3	1981	-29	1971	6	9.4	1979	1487	0	.0	.0	.5	14.3	31.0	13.7
Feb	36.5	3.9	20.2	59	1982	22	25.6	1996	-38	1985	1	13.0	1985	1255	0	.0	.0	1.7	8.4	28.3	10.4
Mar	41.6	13.0	27.3	65	1987	7	32.5	1992	-24	1965	3	19.8	1977	1169	0	.0	.0	6.6	4.3	30.9	3.2
Apr	49.3	20.5	34.9	75+	1992	30	42.0	1992	-7	1973	9	29.7	1975	903	0	.0	.0	15.9	1.6	29.1	.4
May	61.3	28.7	45.0	84+	2000	31	50.1	1992	11	1995	9	40.7	1983	621	0	.0	.0	27.2	.0	23.4	.0
Jun	73.0	33.9	53.5	90+	1990	30	56.9	1990	17+	1988	1	48.1	1998	348	2	.0	.1	29.8	.0	11.7	.0
Jul	79.4	39.9	59.7	98	1989	8	62.2	1984	24	1995	22	56.0	1993	171	4	.0	.7	31.0	.0	2.2	.0
Aug	77.9	38.7	58.3	93+	2000	2	61.0	1996	23+	1999	14	54.6	1974	213	5	.0	.6	31.0	.0	3.3	.0
Sep	70.4	31.8	51.1	90+	1978	6	56.0	1990	12+	1999	29	45.5	1985	417	0	.0	.1	29.4	.0	15.7	.0
Oct	58.6	23.4	41.0	80	1987	4	47.9	2000	-5	1996	22	34.5	1976	743	0	.0	.0	25.4	.4	28.0	.1
Nov	42.3	13.3	27.8	68+	1999	17	34.4	1981	-21	1976	29	20.7	1993	1116	0	.0	.0	8.9	5.6	29.6	2.7
Dec	34.0	3.9	19.0	59	1998	2	28.7	1980	-32+	1998	23	13.7	1998	1428	0	.0	.0	1.3	12.7	31.0	10.2
Ann	54.8	21.0	37.9	98	Jul 1989	8	62.2	Jul 1984	-38	Feb 1985	1	9.4	Jan 1979	9871	11	.0	1.5	208.7	47.3	264.2	40.7

\+ 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: 1963-2001

(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	1.19	.97	.90	1967	25	3.51	1979	.21	1981
Feb	1.13	.89	1.55	1996	21	3.14	1996	.17	1981
Mar	1.25	1.16	1.32	1965	24	2.51	1975	.36	1999
Apr	1.19	1.15	.84	1972	12	2.65	1990	.28	1982
May	1.55	1.23	1.20	1981	3	4.35	1981	.23	1974
Jun	1.34	1.17	2.15	1984	7	3.48	1984	.00	1980
Jul	1.69	1.63	1.24	1977	25	2.94	1977	.17	1972
Aug	1.64	1.51	1.00	1968	7	3.58	1983	.44	1985
Sep	1.62	1.58	1.26	1970	14	3.61	1985	.16	1979
Oct	1.40	1.33	1.02	1985	9	2.60	1990	.18	1988
Nov	1.16	1.16	1.39	1965	25	3.52	1983	.03	1993
Dec	1.19	.86	1.66	1966	6	4.98	1983	.10	1976
Ann	16.35	15.71	2.15	Jun 1984	7	4.98	Dec 1983	.00	Jun 1980

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	9.7	4.3	.2	.0
Feb	8.6	3.6	.2	.1
Mar	9.1	4.1	.3	@
Apr	7.8	4.2	.3	.0
May	8.6	4.4	.6	@
Jun	7.3	3.6	.5	.1
Jul	9.9	4.9	.6	.1
Aug	10.9	5.2	.3	.0
Sep	9.0	4.3	.6	.0
Oct	6.6	4.1	.7	@
Nov	7.1	3.3	.3	.0
Dec	7.5	3.7	.3	@
Ann	102.1	49.7	4.9	.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	.22	.32	.50	.66	.82	1.00	1.21	1.45	1.78	2.30	2.81
Feb	.23	.33	.50	.65	.81	.97	1.16	1.38	1.67	2.14	2.59
Mar	.50	.62	.78	.91	1.04	1.17	1.30	1.46	1.67	1.98	2.26
Apr	.41	.52	.68	.82	.96	1.09	1.24	1.41	1.64	1.98	2.30
May	.34	.48	.71	.91	1.12	1.34	1.58	1.88	2.27	2.88	3.47
Jun	.22	.40	.63	.81	.99	1.18	1.39	1.64	1.96	2.47	2.94
Jul	.40	.56	.80	1.03	1.25	1.48	1.74	2.05	2.46	3.10	3.71
Aug	.55	.70	.93	1.12	1.31	1.50	1.71	1.95	2.26	2.75	3.20
Sep	.40	.55	.78	.99	1.20	1.42	1.67	1.96	2.34	2.94	3.51
Oct	.40	.53	.73	.90	1.07	1.25	1.45	1.68	1.98	2.45	2.89
Nov	.19	.29	.46	.62	.78	.96	1.16	1.41	1.75	2.29	2.81
Dec	.12	.21	.38	.54	.72	.92	1.16	1.46	1.86	2.53	3.19
Ann	11.35	12.31	13.54	14.47	15.31	16.12	16.95	17.88	19.00	20.64	22.06

\+ 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: 1963-2001
(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	19.2	17.2	17	17
Feb	16.0	17.0	22	24
Mar	17.5	16.4	20	19
Apr	7.2	5.8	6	4
May	1.5	.0	#	0
Jun	.2	.0	#	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.0	.0	#	0
Oct	1.2	.0	#	0
Nov	8.5	6.1	1	1
Dec	14.2	8.1	8	8
Ann	85.5	70.6	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	16.0	1993	7	44.8	1974	41+	1997	31	34	1979
Feb	17.0	1996	21	33.3	1989	57	1993	25	37+	1997
Mar	13.0	1995	6	30.8	1975	52	1993	1	39	1993
Apr	8.0	1998	16	28.7	1973	35	1984	6	24	1975
May	6.2	1982	13	16.1	1979	16	1984	2	3	1984
Jun	3.0	1984	7	3.0	1984	2	1976	14	#	1976
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	2	1986	26	#+	1996
Oct	6.0	1991	25	6.2	1975	8	1991	25	1+	1998
Nov	8.0	1973	5	25.5	1983	12+	1989	27	4	1992
Dec	16.0	1995	31	37.0	1978	36	1983	28	24	1983
Ann	17.0	Feb 1996	21	44.8	Jan 1974	57	Feb 1993	25	39	Mar 1993

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	7.6	5.8	2.2	.7	.1
Feb	6.1	4.7	1.9	.6	.2
Mar	6.9	5.3	1.8	.6	.1
Apr	3.4	2.4	.8	.2	.0
May	.8	.4	.2	.1	.0
Jun	.1	.1	@	.0	.0
Jul	.0	.0	.0	.0	.0
Aug	.0	.0	.0	.0	.0
Sep	.0	.0	.0	.0	.0
Oct	.7	.6	.2	@	.0
Nov	3.8	2.6	.9	.4	.0
Dec	5.5	4.2	1.9	1.0	.3
Ann	34.9	26.1	9.9	3.6	.7

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	-9.9	-9.9	-9.9	-9.9
Feb	-9.9	-9.9	-9.9	-9.9
Mar	-9.9	-9.9	-9.9	-9.9
Apr	2.2	.4	.3	.0
May	1.1	.6	.3	.2
Jun	@	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.0	.0	.0	.0
Oct	.6	.3	.1	.0
Nov	3.9	1.6	.8	.0
Dec	-9.9	-9.9	-9.9	-9.9
Ann	-9.9	-9.9	-9.9	-9.9

+ 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	8/05	7/31	7/27	7/24	7/22	7/19	7/16	7/12	7/08
32	7/23	7/17	7/13	7/09	7/06	7/03	6/29	6/25	6/19
28	7/07	6/30	6/25	6/21	6/17	6/13	6/09	6/04	5/28
24	6/26	6/18	6/11	6/06	6/01	5/27	5/21	5/15	5/06
20	6/04	5/27	5/22	5/18	5/14	5/09	5/05	4/30	4/22
16	5/18	5/12	5/07	5/03	4/29	4/25	4/21	4/16	4/10

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	7/28	7/31	8/03	8/05	8/08	8/10	8/13	8/16	8/20
32	8/01	8/08	8/13	8/17	8/21	8/25	8/30	9/04	9/10
28	8/16	8/23	8/28	9/02	9/06	9/10	9/14	9/20	9/27
24	9/02	9/08	9/12	9/16	9/20	9/23	9/27	10/01	10/08
20	9/17	9/22	9/26	9/29	10/02	10/05	10/08	10/12	10/17
16	9/25	10/02	10/07	10/11	10/14	10/18	10/22	10/27	11/02

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	39	31	26	21	17	12	7	2	0
32	79	67	59	52	45	39	32	23	12
28	116	104	95	87	80	73	65	57	44
24	144	132	124	117	110	103	96	88	76
20	169	160	153	147	141	135	129	122	112
16	198	187	180	174	168	162	155	148	137

***** 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	1487	1255	1169	903	621	348	171	213	417	743	1116	1428	9871
60	1332	1115	1014	753	466	210	55	91	273	588	966	1273	8136
57	1239	1031	921	663	374	141	19	44	195	497	876	1180	7180
55	1177	975	859	603	315	103	8	24	150	437	816	1118	6585
50	1022	835	704	454	179	37	0	3	66	296	666	963	5225
32	468	338	194	63	1	0	0	0	0	21	185	408	1678

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	3	7	48	150	403	644	856	815	574	301	59	3	3863
55	0	0	0	0	3	57	151	126	34	4	0	0	375
57	0	0	0	0	1	35	100	84	19	2	0	0	241
60	0	0	0	0	0	14	44	38	7	0	0	0	103
65	0	0	0	0	0	2	4	5	0	0	0	0	11
70	0	0	0	0	0	0	0	0	0	0	0	0	0

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	0	42	199	420	620	582	352	122	4	0	0	0	0	42	241	661	1281	1863	2215	2337	2341	2341
45	0	0	0	11	92	274	465	427	215	43	0	0	0	0	0	11	103	377	842	1269	1484	1527	1527	1527
50	0	0	0	0	21	145	312	272	98	5	0	0	0	0	0	0	21	166	478	750	848	853	853	853
55	0	0	0	0	0	50	161	131	27	0	0	0	0	0	0	0	0	50	211	342	369	369	369	369
60	0	0	0	0	0	7	45	35	2	0	0	0	0	0	0	0	0	7	52	87	89	89	89	89
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	0	14	73	201	361	465	441	318	173	28	0	0	0	14	87	288	649	1114	1555	1873	2046	2074	2074

(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