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: HAMER 4 NW, ID **COOP ID: 103964**

Climate Division: ID 9 **NWS Call Sign:** **Elevation: 4,790 Feet** **Lat: 43˚58N** **Lon: 112˚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	28.3	4.4	16.4	55	1981	1	27.8	1981	-48	1979	1	5.8	1985	1508	0	.0	.0	.2	19.7	30.7	12.7
Feb	35.0	10.0	22.5	58+	1992	28	30.8	2000	-46	1985	1	9.0	1985	1191	0	.0	.0	.9	10.0	28.0	7.8
Mar	47.0	19.9	33.5	74+	1986	29	41.1	1992	-27	1960	1	20.1	1985	978	0	.0	.0	11.9	1.8	29.8	1.2
Apr	59.9	27.6	43.8	86	1992	29	49.6	1990	6+	1984	13	35.7	1975	638	0	.0	.0	25.3	.0	22.9	.0
May	69.3	36.9	53.1	91+	1966	27	58.4	1992	14	1972	1	48.8	1975	370	2	.0	.0	30.4	.0	9.6	.0
Jun	78.8	43.8	61.3	102	1988	25	67.6	1988	25+	1960	21	55.0	1998	154	43	@	3.1	30.0	.0	1.9	.0
Jul	87.0	47.9	67.5	105	1960	20	71.1+	1989	28	1986	5	60.0	1993	50	126	.0	11.7	31.0	.0	.2	.0
Aug	85.9	45.5	65.7	102+	1961	4	70.1	1991	20	1992	26	61.5	1985	71	91	.1	9.9	31.0	.0	.9	.0
Sep	75.6	36.1	55.9	97	1950	3	63.6	1990	10	1983	20	48.8	1971	298	24	.0	1.3	29.9	.0	10.6	.0
Oct	62.0	26.4	44.2	88	1992	2	51.3	1988	2	1996	21	39.4	1984	645	0	.0	.0	27.1	@	25.3	.0
Nov	41.9	16.0	29.0	70	1965	1	36.3	1999	-26	1978	15	20.4	1985	1083	0	.0	.0	7.1	5.4	28.9	2.9
Dec	29.6	5.3	17.5	60	1995	1	26.0	1980	-40	1983	23	8.4	1985	1474	0	.0	.0	.4	18.2	30.8	12.7
Ann	58.4	26.7	42.5	105	Jul 1960	20	71.1+	Jul 1989	-48	Jan 1979	1	5.8	Jan 1985	8460	286	.1	26.0	225.2	55.1	219.6	37.3

\+ 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: 1948-2001

(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	.66	.63	1.03	1973	19	1.93	1973	.01	1992
Feb	.51	.43	.67	1962	11	1.61	1978	.02+	1991
Mar	.70	.67	2.11	1963	15	1.77	1982	.05	1994
Apr	.87	.77	.83	1963	27	2.29	1978	.09	1977
May	1.52	1.29	1.34	1995	6	4.21	1980	.13	1992
Jun	1.18	1.06	1.14	1952	24	2.91	1995	.25	1981
Jul	.91	.74	1.34	1973	20	2.98	1984	.00	1974
Aug	.76	.76	1.35	1951	22	1.65	1983	.04	2000
Sep	.61	.60	.94	1985	12	2.20	1985	.00+	1987
Oct	.65	.50	1.17	1949	8	2.20	1994	.00+	1988
Nov	.74	.72	1.07	1949	10	1.69	1983	.00	1976
Dec	.66	.68	.89	1959	25	1.51	1971	.00	1976
Ann	9.77	9.56	2.11	Mar 1963	15	4.21	May 1980	.00+	Oct 1988

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	6.6	2.3	.1	@
Feb	6.2	1.8	.0	.0
Mar	6.7	2.3	.1	@
Apr	6.8	3.0	.1	.0
May	8.9	4.7	.6	.1
Jun	7.4	3.9	.4	.0
Jul	4.7	2.3	.3	.1
Aug	4.9	1.9	.2	.0
Sep	4.0	1.9	.2	.0
Oct	4.8	2.2	.2	.0
Nov	7.4	2.9	.0	.0
Dec	6.6	2.5	.1	.0
Ann	75.0	31.7	2.3	.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	.10	.15	.24	.34	.43	.53	.65	.80	1.00	1.32	1.63
Feb	.04	.07	.14	.21	.28	.37	.48	.62	.80	1.12	1.43
Mar	.11	.17	.27	.37	.47	.57	.70	.85	1.05	1.38	1.70
Apr	.10	.17	.29	.41	.54	.68	.85	1.06	1.34	1.81	2.26
May	.26	.39	.61	.82	1.04	1.27	1.53	1.86	2.28	2.98	3.64
Jun	.25	.35	.53	.69	.85	1.02	1.21	1.44	1.74	2.23	2.69
Jul	.08	.18	.33	.46	.60	.75	.92	1.13	1.40	1.85	2.28
Aug	.11	.18	.29	.39	.50	.62	.76	.93	1.15	1.53	1.88
Sep	.00	.00	.14	.24	.35	.47	.60	.77	1.00	1.37	1.74
Oct	.00	.07	.18	.29	.39	.51	.65	.81	1.04	1.42	1.78
Nov	.10	.20	.33	.43	.53	.64	.77	.91	1.11	1.41	1.70
Dec	.05	.12	.23	.33	.43	.53	.66	.81	1.01	1.34	1.66
Ann	6.25	6.91	7.76	8.41	9.00	9.58	10.17	10.84	11.66	12.86	13.91

\+ 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

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	6.6	6.5	7	6
Feb	5.5	2.8	7	4
Mar	3.0	1.9	3	#
Apr	1.3	.4	#	0
May	.3	.0	0	0
Jun	.1	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	#	.0	0	0
Oct	.7	.0	#	0
Nov	4.5	3.3	1	#
Dec	8.0	6.2	5	4
Ann	30.0	21.1	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	6.0	1971	12	13.1	1973	28	1993	26	26	1993
Feb	8.0	1971	19	13.2	1998	28	1993	2	24	1993
Mar	6.0	1985	27	15.2	1985	26	1985	6	23	1985
Apr	3.4	1975	26	8.4	1975	15	1985	2	3	1985
May	4.0	1975	20	4.0	1975	0	0	0	0	0
Jun	2.0	1974	7	2.0	1974	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	#	1971	30	#	1971	0	0	0	0	0
Oct	3.5	1971	30	6.0	1971	4	1971	30	#+	1991
Nov	6.0	1978	12	16.0	1985	14	1985	30	5	1985
Dec	12.0	1998	4	25.6	1971	20	1992	30	18	1985
Ann	12.0	Dec 1998	4	25.6	Dec 1971	28+	Feb 1993	2	26	Jan 1993

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	6.1	2.7	.6	@	.0
Feb	4.6	2.2	.4	@	.0
Mar	2.3	1.1	.2	.1	.0
Apr	1.1	.6	.1	.0	.0
May	.1	.1	@	.0	.0
Jun	@	@	.0	.0	.0
Jul	.0	.0	.0	.0	.0
Aug	.0	.0	.0	.0	.0
Sep	.0	.0	.0	.0	.0
Oct	.6	.3	.1	.0	.0
Nov	4.1	1.9	.4	@	.0
Dec	6.0	2.9	.8	.2	@
Ann	24.9	11.8	2.6	.3	@

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	26.1	22.6	14.0	3.8
Feb	19.6	16.6	8.4	2.4
Mar	4.7	3.4	2.4	1.4
Apr	.3	.1	.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	.3	.2	.0	.0
Nov	5.8	3.1	1.2	.4
Dec	18.4	10.8	7.6	4.1
Ann	75.2	56.8	33.6	12.1

+ 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	7/22	7/16	7/12	7/08	7/05	7/01	6/28	6/23	6/18
32	7/07	6/30	6/25	6/21	6/17	6/13	6/09	6/04	5/29
28	6/17	6/09	6/03	5/29	5/24	5/19	5/14	5/08	4/30
24	5/22	5/17	5/13	5/10	5/07	5/04	4/30	4/27	4/21
20	5/15	5/09	5/05	5/01	4/28	4/25	4/21	4/17	4/12
16	4/30	4/25	4/21	4/18	4/15	4/12	4/09	4/05	3/31

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	8/07	8/13	8/17	8/20	8/23	8/26	8/30	9/03	9/09
32	8/21	8/26	8/29	9/01	9/03	9/06	9/09	9/12	9/17
28	9/03	9/07	9/11	9/13	9/16	9/19	9/21	9/25	9/29
24	9/08	9/13	9/17	9/20	9/23	9/26	9/29	10/03	10/08
20	9/16	9/22	9/26	9/30	10/04	10/07	10/11	10/15	10/21
16	9/28	10/04	10/09	10/13	10/17	10/21	10/25	10/30	11/06

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	75	66	60	54	49	44	38	32	23
32	103	94	88	82	77	72	67	61	52
28	144	134	126	120	114	108	102	94	84
24	164	156	149	144	139	133	128	122	113
20	184	175	168	163	158	153	147	141	132
16	214	204	197	190	184	179	172	165	155

***** 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	1508	1191	978	638	370	154	50	71	298	645	1083	1474	8460
60	1353	1051	823	489	228	70	12	22	187	492	933	1319	6979
57	1260	967	730	405	156	37	4	9	133	402	843	1226	6172
55	1198	911	671	349	115	22	1	5	103	344	783	1164	5666
50	1043	771	527	225	43	4	0	1	46	213	633	1009	4515
32	516	324	139	13	0	0	0	0	0	5	179	479	1655

Base — Cooling Degree Days (1)

Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	30	57	184	365	655	879	1099	1044	715	383	87	28	5526
55	0	0	4	11	56	210	387	335	129	8	0	0	1140
57	0	0	0	7	35	166	328	277	99	5	0	0	917
60	0	0	0	1	15	109	243	197	63	2	0	0	630
65	0	0	0	0	2	43	126	91	24	0	0	0	286
70	0	0	0	0	0	12	48	27	7	0	0	0	94

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	20	154	397	623	839	794	474	178	7	0	0	0	20	174	571	1194	2033	2827	3301	3479	3486	3486
45	0	0	1	73	256	474	684	639	332	84	0	0	0	0	1	74	330	804	1488	2127	2459	2543	2543	2543
50	0	0	0	25	144	328	529	484	204	27	0	0	0	0	0	25	169	497	1026	1510	1714	1741	1741	1741
55	0	0	0	5	59	198	375	332	99	4	0	0	0	0	0	5	64	262	637	969	1068	1072	1072	1072
60	0	0	0	0	12	95	228	187	33	0	0	0	0	0	0	0	12	107	335	522	555	555	555	555
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	0	1	41	166	308	429	547	535	387	205	21	0	0	1	42	208	516	945	1492	2027	2414	2619	2640	2640

(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

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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