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: MALAD CITY AP, ID **COOP ID: 105559**

Climate Division: ID10 **NWS Call Sign: MLD** **Elevation: 4,470 Feet** **Lat: 42˚09N** **Lon: 112˚17W**

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	31.1	10.4	20.8	54	1953	25	30.1	1994	-33+	1984	18	10.4	1989	1372	0	.0	.0	.2	14.8	30.5	6.7
Feb	37.8	13.7	25.8	68	1963	5	35.7	1995	-35+	1982	6	12.7	1985	1099	0	.0	.0	3.1	6.4	27.2	3.9
Mar	48.6	22.5	35.6	75+	1986	29	41.2+	1992	-11	1952	3	24.3	1976	913	0	.0	.0	15.4	.7	26.9	.4
Apr	58.5	27.9	43.2	85	1977	24	49.0	2000	7	1976	2	37.1	1975	654	0	.0	.0	25.5	.0	19.2	.0
May	68.0	36.1	52.1	93	1954	20	57.0	1992	18+	1968	7	47.1	1975	403	1	.0	.0	30.2	.0	7.0	.0
Jun	79.2	42.3	60.8	102	1988	24	66.3	1988	24	1960	21	56.6	1998	165	37	.1	4.4	30.0	.0	1.4	.0
Jul	88.3	47.7	68.0	104	2001	4	72.4	1998	32	1993	13	59.6	1993	40	134	.6	16.1	31.0	.0	@	.0
Aug	87.2	46.2	66.7	104	2000	2	71.9	2000	26	1992	26	62.7	1993	58	110	.3	14.8	31.0	.0	.2	.0
Sep	77.0	37.3	57.2	98	1950	4	63.7	1990	18+	1985	30	52.3	1986	248	14	.0	2.2	29.9	.0	6.0	.0
Oct	63.5	28.1	45.8	89+	2001	1	51.9	1988	11+	1993	30	40.7	1984	595	0	.0	.0	27.7	.1	20.8	.0
Nov	45.4	20.2	32.8	73	1999	13	38.9	1999	-28	1955	15	26.9	1994	966	0	.0	.0	11.1	2.6	27.1	.8
Dec	33.6	11.8	22.7	63	1995	1	30.3	1995	-32	1990	30	12.0	1985	1312	0	.0	.0	1.1	11.5	30.1	4.5
Ann	59.9	28.7	44.3	104+	Jul 2001	4	72.4	Jul 1998	-35+	Feb 1982	6	10.4	Jan 1989	7825	296	1.0	37.5	236.2	36.1	196.4	16.3

\+ 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	1.28	1.16	1.04	1997	26	3.51	1997	.19	1992
Feb	1.10	1.09	.84	1986	17	3.12	1986	.14	1988
Mar	1.20	.97	.85	1975	25	3.18	1982	.29	1977
Apr	1.25	1.00	.94	1971	26	3.10	1971	.07	1987
May	2.01	1.62	1.60	1957	19	5.59	1980	.34	1992
Jun	1.13	.89	1.29	1964	17	3.14	1972	.10	2000
Jul	1.08	.90	2.13	1979	22	4.22	1984	.00	1999
Aug	.95	.71	1.31	1984	16	2.86	1983	.05	1985
Sep	1.09	.81	1.99	1973	8	3.94	1973	.00	1974
Oct	1.24	.97	1.12	1967	5	3.13	2000	.00	1978
Nov	1.03	1.08	1.40	1965	24	2.90	1983	.00	1976
Dec	1.05	.69	1.19	2001	6	3.76	1983	.00	1976
Ann	14.41	13.88	2.13	Jul 1979	22	5.59	May 1980	.00+	Jul 1999

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	10.4	4.2	.4	@
Feb	8.9	3.6	.4	.0
Mar	8.8	3.9	.3	.0
Apr	7.9	3.8	.4	.0
May	10.6	5.6	.9	.1
Jun	5.9	3.1	.6	@
Jul	4.9	2.2	.5	.2
Aug	5.1	2.6	.6	@
Sep	5.2	3.1	.5	.1
Oct	5.9	3.3	.7	.1
Nov	8.1	3.6	.2	.0
Dec	8.5	3.9	.2	.0
Ann	90.2	42.9	5.7	.5

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	.28	.40	.59	.76	.93	1.11	1.31	1.56	1.88	2.39	2.87
Feb	.15	.24	.39	.55	.71	.89	1.09	1.34	1.69	2.24	2.78
Mar	.29	.40	.57	.73	.89	1.05	1.24	1.46	1.74	2.20	2.63
Apr	.21	.31	.50	.67	.85	1.04	1.26	1.53	1.89	2.47	3.02
May	.40	.59	.88	1.15	1.42	1.72	2.05	2.44	2.97	3.82	4.62
Jun	.14	.23	.39	.54	.71	.90	1.12	1.38	1.75	2.35	2.93
Jul	.01	.07	.19	.33	.50	.71	.96	1.30	1.77	2.59	3.41
Aug	.09	.16	.29	.42	.56	.72	.91	1.15	1.48	2.03	2.56
Sep	.02	.08	.22	.37	.54	.74	.99	1.32	1.77	2.55	3.32
Oct	.07	.18	.37	.55	.75	.96	1.22	1.53	1.96	2.67	3.35
Nov	.06	.16	.32	.47	.63	.80	1.01	1.27	1.61	2.18	2.74
Dec	.04	.13	.28	.43	.60	.79	1.01	1.29	1.68	2.32	2.95
Ann	8.57	9.62	11.01	12.10	13.08	14.05	15.06	16.20	17.60	19.67	21.49

\+ 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	10.8	9.5	6	5
Feb	7.7	7.2	6	4
Mar	3.8	2.5	2	1
Apr	1.6	.4	#	0
May	.2	.0	#	0
Jun	.0	.0	#	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	#	.0	0	0
Oct	.6	.0	#	0
Nov	5.5	2.5	1	0
Dec	8.9	6.3	3	2
Ann	39.1	28.4	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	7.7	1996	19	25.6	1993	21+	1984	4	18	1984
Feb	7.3	1985	20	19.9	1976	22+	1984	22	19	1984
Mar	5.9	1985	12	25.1	1985	22	1985	5	13	1985
Apr	7.0	1974	10	7.2	1974	7	1974	10	#	1986
May	2.0	1983	13	2.9	1983	2	1983	13	#	1996
Jun	.0	0	0	.0	0	0	0	0	#	1983
Jul	.0	0	0	.0	0	0	0	0	0	0
Aug	.0	0	0	.0	0	0	0	0	0	0
Sep	#	1978	18	#	1978	0	0	0	0	0
Oct	4.7	1984	17	5.5	1984	6	1984	17	#	1989
Nov	7.0	1975	28	26.4	1985	11+	1975	30	5	1985
Dec	7.0	1981	25	43.2	1983	21+	1983	31	13	1983
Ann	7.7	Jan 1996	19	43.2	Dec 1983	22+	Mar 1985	5	19	Feb 1984

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	8.1	4.3	.8	.4	.0
Feb	5.7	2.7	.7	.2	.0
Mar	2.9	1.5	.4	.1	.0
Apr	1.0	.4	.2	.1	.0
May	.2	.1	.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	.5	.3	@	.0	.0
Nov	3.6	1.9	.6	.2	.0
Dec	5.7	3.2	.9	.2	.0
Ann	27.7	14.4	3.6	1.2	.0

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	23.9	19.8	17.0	8.8
Feb	19.0	16.1	13.1	7.6
Mar	7.5	4.7	3.6	1.9
Apr	.3	.1	.1	.0
May	.1	.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	.1	@	.0
Nov	5.1	2.8	1.7	.2
Dec	19.0	13.8	9.2	2.4
Ann	75.0	57.4	44.7	20.9

+ 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	7/13	7/06	7/01	6/27	6/23	6/19	6/15	6/10	6/04
32	6/25	6/18	6/13	6/09	6/05	6/01	5/28	5/23	5/16
28	6/01	5/25	5/21	5/17	5/13	5/09	5/05	5/01	4/24
24	5/15	5/10	5/06	5/03	4/30	4/26	4/23	4/19	4/14
20	4/27	4/22	4/18	4/15	4/11	4/08	4/05	4/01	3/26
16	4/18	4/10	4/04	3/30	3/25	3/21	3/16	3/10	3/01

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	8/13	8/19	8/23	8/26	8/30	9/02	9/05	9/09	9/15
32	9/01	9/06	9/10	9/13	9/16	9/19	9/22	9/25	9/30
28	9/11	9/15	9/18	9/20	9/22	9/25	9/27	9/30	10/04
24	9/19	9/24	9/27	9/30	10/03	10/06	10/09	10/12	10/17
20	10/02	10/07	10/11	10/15	10/18	10/21	10/25	10/29	11/03
16	10/14	10/20	10/25	10/29	11/01	11/05	11/09	11/13	11/19

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	97	86	79	73	67	61	55	47	37
32	128	119	113	107	102	97	91	85	75
28	154	147	141	136	132	127	122	117	109
24	178	170	165	160	156	151	147	141	134
20	214	205	199	194	189	184	179	172	164
16	254	243	234	227	220	213	206	198	186

***** 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	1372	1099	913	654	403	165	40	58	248	595	966	1312	7825
60	1217	959	758	504	257	77	9	16	134	441	816	1157	6345
57	1124	875	665	416	180	41	2	5	82	350	726	1064	5530
55	1062	819	603	361	136	25	1	2	56	291	666	1002	5024
50	908	687	460	229	55	5	0	0	15	163	517	847	3886
32	413	268	89	9	0	0	0	0	0	2	103	338	1222

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	64	93	200	345	622	862	1117	1075	756	429	127	49	5739
55	0	0	0	6	45	197	404	364	121	6	0	0	1143
57	0	0	0	2	27	154	344	305	88	3	0	0	923
60	0	0	0	0	10	99	258	223	50	1	0	0	641
65	0	0	0	0	1	37	134	110	14	0	0	0	296
70	0	0	0	0	0	9	52	39	2	0	0	0	102

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	5	55	191	426	665	905	876	560	250	28	0	0	5	60	251	677	1342	2247	3123	3683	3933	3961	3961
45	0	0	11	94	279	516	750	721	415	134	4	0	0	0	11	105	384	900	1650	2371	2786	2920	2924	2924
50	0	0	0	37	157	367	595	566	276	51	0	0	0	0	0	37	194	561	1156	1722	1998	2049	2049	2049
55	0	0	0	9	68	231	440	413	156	14	0	0	0	0	0	9	77	308	748	1161	1317	1331	1331	1331
60	0	0	0	0	14	123	286	263	59	0	0	0	0	0	0	0	14	137	423	686	745	745	745	745
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	0	7	65	174	309	455	573	565	424	242	39	1	0	7	72	246	555	1010	1583	2148	2572	2814	2853	2854

(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:
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

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