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: MOSCOW U OF I, ID **COOP ID: 106152**

Climate Division: ID 2 **NWS Call Sign:** **Elevation: 2,660 Feet** **Lat: 46˚43N** **Lon: 116˚58W**

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	35.6	23.2	29.4	58	1971	31	37.4	1994	-30	1937	20	14.8	1979	1104	0	.0	.0	.8	9.1	25.7	1.7
Feb	41.3	26.8	34.1	66	1995	24	41.7	1991	-26	1996	2	23.0	1989	867	0	.0	.0	4.8	3.6	21.3	.8
Mar	49.0	31.2	40.1	73+	1999	20	46.5	1992	-5	1955	4	33.5	1976	774	0	.0	.0	13.4	.4	18.9	@
Apr	57.5	35.4	46.5	88+	1987	27	52.2	1987	11	1936	1	40.9	1975	557	0	.0	.0	24.0	.0	10.6	.0
May	65.9	40.6	53.3	94	1928	25	59.6	1993	19	1954	1	48.4	1974	367	2	.0	.2	30.0	.0	3.9	.0
Jun	73.1	45.2	59.2	100	1924	30	64.2	1977	28	1973	10	55.4	1976	194	18	.0	.9	29.9	.0	.5	.0
Jul	82.6	48.4	65.5	105	1928	26	70.8	1998	27	1939	18	59.9	1993	73	88	.2	7.3	31.0	.0	@	.0
Aug	84.0	48.7	66.4	109	1961	4	71.1	1971	30+	1980	25	60.7	1980	70	111	.3	9.0	31.0	.0	.1	.0
Sep	74.4	42.9	58.7	100	1973	5	64.3+	1998	20	1934	25	53.3	1985	225	35	@	1.7	29.9	.0	2.6	.0
Oct	60.5	36.0	48.3	88+	1987	2	55.6	1988	2	1935	31	43.6	1984	520	0	.0	.0	26.7	@	9.9	.0
Nov	43.1	29.9	36.5	73	1999	12	44.2	1999	-14+	1955	15	23.4	1985	855	0	.0	.0	6.9	3.0	18.7	.2
Dec	35.5	23.6	29.6	60+	1921	12	36.3	1980	-42	1968	30	19.2	1985	1100	0	.0	.0	1.1	9.7	26.3	1.3
Ann	58.5	36.0	47.3	109	Aug 1961	4	71.1	Aug 1971	-42	Dec 1968	30	14.8	Jan 1979	6706	254	.5	19.1	229.5	25.8	138.5	4.0

\+ 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: 1893-2001

(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	2.99	2.85	2.20	1913	13	6.70	1974	.45	1985
Feb	2.52	2.30	1.71	1968	19	6.09	1996	.76	1977
Mar	2.57	2.58	2.40	1897	24	4.39	1972	.40	1992
Apr	2.52	2.23	1.22	1965	19	5.70	1996	.47	1977
May	2.62	2.46	1.67	1972	8	5.20	1998	.58	1992
Jun	1.87	1.72	1.84	1971	2	4.81	1971	.53	1986
Jul	1.12	.98	1.87	1909	27	2.90	1987	.02	1973
Aug	1.19	.97	2.21	1992	22	5.02	1989	.00	1988
Sep	1.28	1.21	1.87	1947	16	3.75	1985	.00+	1987
Oct	2.01	1.85	2.19	1994	27	4.51	1994	.00	1987
Nov	3.54	3.50	2.40	1896	8	7.32	1973	.93	1976
Dec	3.14	2.90	2.51	1998	2	6.92+	1996	.54	1985
Ann	27.37	26.98	2.51	Dec 1998	2	7.32	Nov 1973	.00+	Aug 1988

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	14.7	8.5	1.9	.2
Feb	13.1	7.4	1.2	.1
Mar	14.3	7.9	1.1	@
Apr	11.6	6.8	1.3	.1
May	11.0	6.2	1.9	.3
Jun	8.9	5.5	.9	.1
Jul	5.7	2.9	.7	@
Aug	4.9	2.7	.6	.2
Sep	6.5	4.0	.5	.1
Oct	8.9	4.8	1.2	.3
Nov	16.4	9.8	1.8	.4
Dec	14.4	8.2	1.5	.3
Ann	130.4	74.7	14.6	2.1

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	.96	1.24	1.66	2.02	2.37	2.72	3.12	3.58	4.17	5.10	5.95
Feb	.79	1.03	1.39	1.69	1.99	2.29	2.62	3.02	3.52	4.31	5.04
Mar	1.05	1.29	1.62	1.89	2.15	2.41	2.69	3.02	3.43	4.06	4.63
Apr	.70	.94	1.30	1.62	1.93	2.25	2.61	3.03	3.58	4.44	5.24
May	1.12	1.35	1.69	1.96	2.21	2.47	2.75	3.07	3.47	4.09	4.65
Jun	.53	.71	.98	1.21	1.44	1.67	1.94	2.25	2.65	3.27	3.86
Jul	.08	.16	.30	.46	.63	.83	1.06	1.36	1.78	2.48	3.17
Aug	.01	.04	.14	.29	.47	.69	.99	1.39	1.97	3.00	4.05
Sep	.00	.05	.22	.40	.61	.86	1.17	1.56	2.11	3.06	4.00
Oct	.15	.36	.68	.97	1.28	1.62	2.00	2.48	3.12	4.16	5.17
Nov	1.28	1.61	2.09	2.50	2.88	3.28	3.70	4.20	4.84	5.83	6.73
Dec	.82	1.12	1.57	1.97	2.37	2.78	3.24	3.79	4.50	5.63	6.68
Ann	19.97	21.42	23.27	24.67	25.90	27.10	28.33	29.68	31.32	33.70	35.74

\+ 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: 1893-2001
(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	14.5	10.0	5	3
Feb	8.2	6.5	2	#
Mar	4.1	3.0	#	#
Apr	1.0	.0	#	0
May	.1	.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	6.5	4.8	1	#
Dec	14.8	11.0	3	2
Ann	49.5	35.3	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	11.8	1980	9	45.3	1996	26	1996	28	17	1993
Feb	10.0	1975	7	27.8	1975	26	1985	9	17	1975
Mar	5.5	1988	29	15.0	1997	15	1987	1	4	1985
Apr	4.0	1996	20	6.0+	1996	2	1982	6	#+	2000
May	2.0	2000	11	2.0	2000	#+	2000	9	#+	2000
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	#	1984	23	#+	1984	0	0	0	0	0
Oct	2.0	1973	31	2.0	1973	2	1973	31	#+	2000
Nov	12.0	1975	30	29.0	1973	13	1975	30	4	1985
Dec	8.0	1971	9	46.8	1971	29	1971	16	15	1971
Ann	12.0	Nov 1975	30	46.8	Dec 1971	29	Dec 1971	16	17+	Jan 1993

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	7.4	5.2	2.0	.8	.1
Feb	4.9	3.0	.9	.3	.1
Mar	2.9	1.8	.4	.1	.0
Apr	.7	.4	.1	.0	.0
May	.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	.3	.2	.0	.0	.0
Nov	3.9	2.5	.8	.1	.1
Dec	7.4	4.9	1.7	.7	.0
Ann	27.6	18.0	5.9	2.0	.3

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	15.0	12.0	8.6	4.7
Feb	5.0	2.5	1.5	.7
Mar	1.9	1.2	.7	.2
Apr	.1	.0	.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	.1	.0	.0	.0
Nov	5.4	3.1	1.7	.1
Dec	12.1	8.4	5.8	1.4
Ann	39.6	27.2	18.3	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	7/18	7/11	7/06	7/02	6/28	6/24	6/20	6/14	6/07
32	6/21	6/12	6/05	5/30	5/25	5/19	5/13	5/06	4/27
28	5/25	5/15	5/09	5/03	4/27	4/22	4/16	4/09	3/31
24	4/28	4/17	4/09	4/03	3/28	3/21	3/15	3/07	2/25
20	3/29	3/19	3/12	3/06	2/28	2/22	2/16	2/09	1/30
16	3/16	3/04	2/24	2/16	2/09	2/02	1/26	1/17	1/05

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	8/20	8/25	8/29	9/02	9/05	9/09	9/14	9/21
32	9/05	9/10	9/14	9/17	9/20	9/23	9/26	9/30	10/05
28	9/19	9/25	9/29	10/03	10/07	10/10	10/14	10/18	10/24
24	10/03	10/10	10/15	10/19	10/23	10/27	11/01	11/06	11/13
20	10/13	10/24	10/31	11/06	11/12	11/18	11/25	12/02	12/13
16	10/29	11/09	11/17	11/23	11/29	12/05	12/12	12/20	12/31

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	93	83	76	70	65	59	54	47	37
32	149	138	130	124	118	112	105	97	87
28	198	185	176	169	162	154	147	138	125
24	248	234	225	217	209	201	193	184	171
20	301	286	275	265	257	248	238	227	212
16	341	322	310	300	291	281	272	260	245

***** 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	1104	867	774	557	367	194	73	70	225	520	855	1100	6706
60	949	727	619	410	227	93	20	21	127	367	705	945	5210
57	856	643	526	325	156	51	8	9	82	281	615	852	4404
55	794	587	464	271	118	30	3	4	58	228	559	790	3906
50	645	455	318	156	46	6	0	0	19	117	420	637	2819
32	203	97	18	1	0	0	0	0	0	1	80	189	589

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	122	154	267	434	659	814	1038	1065	800	505	215	112	6185
55	0	0	0	14	63	155	327	356	168	19	4	0	1106
57	0	0	0	8	40	115	270	299	132	9	0	0	873
60	0	0	0	2	18	67	189	218	87	3	0	0	584
65	0	0	0	0	2	18	88	111	35	0	0	0	254
70	0	0	0	0	0	3	26	41	11	0	0	0	81

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	2	29	81	215	422	584	802	828	568	280	50	5	2	31	112	327	749	1333	2135	2963	3531	3811	3861	3866
45	0	2	27	110	274	434	647	673	421	156	15	0	0	2	29	139	413	847	1494	2167	2588	2744	2759	2759
50	0	0	3	49	153	289	492	518	283	78	1	0	0	0	3	52	205	494	986	1504	1787	1865	1866	1866
55	0	0	0	19	77	166	339	365	167	26	0	0	0	0	0	19	96	262	601	966	1133	1159	1159	1159
60	0	0	0	1	30	71	196	225	78	7	0	0	0	0	0	1	31	102	298	523	601	608	608	608
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	0	10	48	134	258	361	510	529	374	181	15	0	0	10	58	192	450	811	1321	1850	2224	2405	2420	2420

(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