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: ENNIS, MT **COOP ID: 242793**

Climate Division: MT 2 **NWS Call Sign:** **Elevation: 4,953 Feet** **Lat: 45˚21N** **Lon: 111˚43W**

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	33.3	14.9	24.1	61	1981	22	32.9	1986	-32	1957	26	8.8	1979	1269	0	.0	.0	1.3	12.5	28.5	5.4
Feb	38.9	17.8	28.4	65+	1988	27	38.1	1991	-31	1989	3	13.4	1989	1026	0	.0	.0	4.2	6.4	25.1	3.0
Mar	46.4	23.1	34.8	73+	1986	28	43.0	1986	-22	1989	4	26.2	1976	938	0	.0	.0	11.9	2.7	25.1	1.0
Apr	56.1	28.5	42.3	85	1987	27	50.2	1987	0	1997	6	32.2	1975	680	0	.0	.0	21.8	.4	19.7	@
May	65.4	35.7	50.6	92	1954	19	56.0	1992	15+	1954	2	46.2	1975	449	0	.0	.0	29.0	.0	8.5	.0
Jun	74.5	42.2	58.4	94+	1990	26	64.9	1988	24	1951	3	53.6	1998	218	19	.0	.8	29.9	.0	1.2	.0
Jul	82.4	46.6	64.5	97	2000	13	68.8	1989	31	1981	8	57.0	1993	93	77	.0	4.5	31.0	.0	@	.0
Aug	81.5	45.1	63.3	97	1961	5	67.6	1991	27	1960	28	59.4	1993	112	59	.0	3.0	31.0	.0	.3	.0
Sep	71.3	37.4	54.4	94	1967	5	60.8	1998	10	1985	29	49.5	1985	329	9	.0	.3	28.9	.0	6.5	.0
Oct	59.4	30.7	45.1	87	1992	1	51.3	1988	-12	1991	30	39.5	1984	620	0	.0	.0	25.0	.4	17.0	.1
Nov	42.1	22.6	32.4	72+	1999	14	44.7	1999	-27	1959	16	19.6	1985	980	0	.0	.0	8.2	5.9	23.3	1.5
Dec	33.6	15.8	24.7	60	1980	26	34.0	1980	-32	1978	29	13.3	1983	1249	0	.0	.0	1.5	12.1	28.2	3.8
Ann	57.1	30.0	43.6	97+	Jul 2000	13	68.8	Jul 1989	-32+	Dec 1978	29	8.8	Jan 1979	7963	164	.0	8.6	223.7	40.4	183.4	14.8

\+ 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

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: ENNIS, MT

COOP ID: 242793

Climate Division: MT 2 **NWS Call Sign:** **Elevation: 4,953 Feet** **Lat: 45°21N** **Lon: 111°43W**

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	.46	.37	.60	1997	11	1.37+	1998	.03	1981
Feb	.45	.42	.57+	1999	10	1.11	1980	.01	1990
Mar	.88	.92	1.04	1967	29	1.64	1995	.24+	1994
Apr	1.30	1.36	.99	1983	3	3.00	1976	.12	1977
May	2.19	2.05	1.39	1980	25	4.51	1980	.53	1986
Jun	2.28	1.99	2.14	1959	26	4.64	1998	.60	1996
Jul	1.37	1.36	1.90	1993	3	3.56	1987	.15	1991
Aug	1.36	1.25	2.65	1969	12	3.19	1993	.03	1994
Sep	1.19	1.01	1.34	1950	9	3.09	1977	.05	1979
Oct	1.02	.93	.86	1991	27	2.82	2000	.00	1987
Nov	.61	.52	.75	1969	7	1.56	1996	.07	1976
Dec	.47	.38	.68	1996	25	1.40	1996	.03	1991
Ann	13.58	13.87	2.65	Aug 1969	12	4.64	Jun 1998	.00	Oct 1987

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	6.3	1.3	.1	.0
Feb	5.0	1.7	.1	.0
Mar	7.7	3.2	.1	.0
Apr	9.6	4.1	.5	.0
May	12.9	6.7	.9	.2
Jun	11.0	6.2	1.2	.1
Jul	8.7	3.9	.6	.1
Aug	8.3	3.8	.7	.1
Sep	6.7	3.5	.7	@
Oct	6.5	3.4	.5	.0
Nov	6.4	2.1	.1	.0
Dec	5.3	1.7	.1	.0
Ann	94.4	41.6	5.6	.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	.06	.10	.16	.23	.29	.37	.46	.56	.71	.94	1.17
Feb	.07	.10	.17	.23	.29	.36	.45	.54	.68	.90	1.10
Mar	.28	.36	.49	.59	.70	.80	.92	1.06	1.23	1.51	1.76
Apr	.35	.48	.66	.83	.99	1.16	1.34	1.57	1.85	2.31	2.73
May	.70	.91	1.21	1.48	1.73	1.99	2.28	2.61	3.04	3.71	4.34
Jun	.80	1.01	1.32	1.59	1.84	2.10	2.38	2.71	3.13	3.78	4.38
Jul	.17	.28	.47	.66	.86	1.09	1.35	1.67	2.11	2.84	3.54
Aug	.21	.33	.53	.71	.91	1.12	1.36	1.66	2.05	2.69	3.31
Sep	.15	.25	.42	.58	.76	.95	1.18	1.46	1.83	2.45	3.05
Oct	.12	.25	.42	.57	.71	.87	1.04	1.25	1.53	1.98	2.40
Nov	.18	.24	.33	.40	.47	.55	.64	.73	.86	1.06	1.25
Dec	.07	.11	.17	.24	.31	.38	.47	.57	.72	.95	1.18
Ann	9.60	10.37	11.35	12.10	12.76	13.41	14.07	14.80	15.70	16.99	18.11

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

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data,
and Information Services

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: ENNIS, MT **COOP ID: 242793**

Climate Division: MT 2 **NWS Call Sign:** **Elevation: 4,953 Feet** **Lat: 45°21N** **Lon: 111°43W**

Snow (inches)

Snow Totals

Means/Medians (1)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	3.8	-99.9	#	0
Feb	6.4	7.0	#	0
Mar	8.2	8.9	#	0
Apr	3.9	2.9	#	0
May	.7	.0	0	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.3	.0	#	0
Oct	2.0	.0	#	0
Nov	2.1	-99.9	#	#
Dec	2.3	-99.9	1	#
Ann	29.7	-9.9	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	7.5	1998	11	19.1	1998	6	2000	12	1+	2000
Feb	8.0	1981	20	13.5	1999	7	1999	11	2	1999
Mar	8.0	1995	4	20.5	1995	8	1985	21	5	1985
Apr	12.0	1983	3	18.0	1983	#+	1999	14	#+	1999
May	5.5	1999	10	5.5	1999	0	0	0	0	0
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	4.0	1983	29	4.0+	1983	#	1999	26	#	1999
Oct	12.0	1991	27	12.0	1991	#+	1997	12	#+	1997
Nov	6.0	1994	17	10.3	1994	4	2000	17	2	2000
Dec	8.0	1996	25	11.3	1997	6	1997	9	3	1997
Ann	12.0+	Oct 1991	27	20.5	Mar 1995	8	Mar 1985	21	5	Mar 1985

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	-9.9	-9.9	-9.9	-9.9	-9.9
Feb	2.2	1.5	.5	.3	.0
Mar	3.2	2.4	.9	.3	.0
Apr	1.5	.9	.6	.2	.1
May	.8	.4	.2	.1	.0
Jun	.0	.0	.0	.0	.0
Jul	.0	.0	.0	.0	.0
Aug	.0	.0	.0	.0	.0
Sep	.2	.1	.1	.0	.0
Oct	.8	.5	.2	.2	.1
Nov	-9.9	-9.9	-9.9	-9.9	-9.9
Dec	3.1	2.0	.9	.3	.0
Ann	-9.9	-9.9	-9.9	-9.9	-9.9

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	.0	.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	.0	.0	.0	.0
Nov	-9.9	-9.9	-9.9	-9.9
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

Complete documentation available from:
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

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: ENNIS, MT **COOP ID: 242793**

Climate Division: MT 2 **NWS Call Sign:** **Elevation: 4,953 Feet** **Lat: 45˚21N** **Lon: 111˚43W**

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

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	8/12	8/18	8/23	8/26	8/30	9/02	9/06	9/11	9/17
32	8/26	8/31	9/04	9/06	9/09	9/12	9/15	9/18	9/23
28	9/06	9/11	9/14	9/17	9/20	9/23	9/26	9/29	10/04
24	9/18	9/24	9/28	10/01	10/04	10/07	10/11	10/15	10/20
20	9/28	10/04	10/08	10/12	10/15	10/18	10/22	10/26	11/01
16	10/06	10/13	10/17	10/21	10/25	10/28	11/01	11/06	11/12

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	88	80	74	69	64	60	54	49	40
32	117	109	102	97	93	88	83	77	68
28	147	139	133	129	124	120	115	110	102
24	179	171	166	161	156	152	147	142	134
20	205	197	191	186	181	176	171	165	156
16	227	218	211	206	200	195	190	183	174

***** 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

Complete documentation available from:
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

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: ENNIS, MT **COOP ID: 242793**

Climate Division: MT 2 **NWS Call Sign:** **Elevation: 4,953 Feet** **Lat: 45˚21N** **Lon: 111˚43W**

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	1269	1026	938	680	449	218	93	112	329	620	980	1249	7963
60	1114	886	783	533	303	113	30	42	203	465	830	1094	6396
57	1021	802	690	448	222	67	12	19	142	373	740	1001	5537
55	959	746	628	394	175	44	7	11	107	314	684	939	5008
50	804	612	481	267	85	11	0	1	44	184	544	784	3817
32	316	203	88	23	0	0	0	0	0	5	156	293	1084

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	70	101	174	334	574	791	1007	970	671	409	166	67	5334
55	0	0	0	14	36	145	301	268	88	5	3	0	860
57	0	0	0	9	21	108	244	214	63	2	0	0	661
60	0	0	0	3	9	64	169	144	34	0	0	0	423
65	0	0	0	0	0	19	77	59	9	0	0	0	164
70	0	0	0	0	0	4	21	15	1	0	0	0	41

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	13	51	153	358	578	785	748	460	220	48	5	2	15	66	219	577	1155	1940	2688	3148	3368	3416	3421
45	0	0	17	70	221	429	630	593	319	118	15	0	0	0	17	87	308	737	1367	1960	2279	2397	2412	2412
50	0	0	0	29	111	284	475	440	192	47	3	0	0	0	0	29	140	424	899	1339	1531	1578	1581	1581
55	0	0	0	5	42	161	322	287	91	10	0	0	0	0	0	5	47	208	530	817	908	918	918	918
60	0	0	0	0	3	68	181	151	29	0	0	0	0	0	0	0	3	71	252	403	432	432	432	432
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	8	42	129	251	380	509	496	332	176	27	0	0	8	50	179	430	810	1319	1815	2147	2323	2350	2350

(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