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: THOMPSON FALLS POWER HSE, MT **COOP ID: 248211**

Climate Division: MT 1 **NWS Call Sign: 3TH** **Elevation: 2,380 Feet** **Lat: 47˚35N** **Lon: 115˚21W**

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	35.1	21.6	28.4	58	1989	30	36.9	1994	-22	1979	1	12.9	1979	1136	0	.0	.0	.6	8.8	28.5	2.0
Feb	42.5	24.5	33.5	71	1995	24	39.8	1992	-16	1956	16	22.5	1989	883	0	.0	.0	4.6	3.5	25.0	1.2
Mar	52.3	29.0	40.7	77	1978	29	47.7	1992	-5	1956	11	35.6	1975	755	0	.0	.0	18.6	.4	22.9	@
Apr	62.5	34.1	48.3	93	1987	28	53.0	1987	17	1966	19	43.0	1975	501	0	.0	.2	27.9	.0	13.9	.0
May	71.0	40.8	55.9	99+	1986	31	61.7	1993	24+	2000	8	50.3	1996	292	10	.0	1.2	30.8	.0	3.3	.0
Jun	78.4	47.2	62.8	100+	1992	24	68.3	1986	32	1999	10	58.5	1981	122	54	.1	4.7	30.0	.0	@	.0
Jul	87.5	50.9	69.2	106+	1994	24	75.4	1985	35+	1971	7	60.4	1993	45	177	1.7	14.7	31.0	.0	.0	.0
Aug	88.1	50.4	69.3	107	1961	4	74.1	1986	32	1965	30	64.4	1980	38	169	2.2	14.3	31.0	.0	.0	.0
Sep	77.0	42.4	59.7	105	1988	5	66.0	1990	20	1985	29	54.4	1985	200	40	.3	2.9	30.0	.0	2.6	.0
Oct	61.4	34.5	48.0	88	1987	1	52.8	1988	10+	1991	30	44.7	1985	527	0	.0	.0	27.2	.0	12.6	.0
Nov	42.9	28.8	35.9	74	1999	12	41.5	1999	-13	1959	16	25.4	1985	874	0	.0	.0	5.3	2.3	21.0	.1
Dec	34.8	22.8	28.8	58	1965	5	34.3	1979	-30	1990	29	19.3	1983	1123	0	.0	.0	.3	9.6	28.2	1.0
Ann	61.1	35.6	48.4	107	Aug 1961	4	75.4	Jul 1985	-30	Dec 1990	29	12.9	Jan 1979	6496	450	4.3	38.0	237.3	24.6	158.0	4.3

\+ 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: 1956-2001

(3) Derived from 1971-2000 serially complete daily data

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Climate Division: MT 1 **NWS Call Sign: 3TH** **Elevation: 2,380 Feet** **Lat: 47˚35N** **Lon: 115˚21W**

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	2.59	2.21	1.44	1969	7	6.61	1974	.30	1985
Feb	2.04	1.75	1.26	1996	7	4.76	1996	.11	1973
Mar	1.78	1.73	.92	1961	1	3.28	1982	.68	1992
Apr	1.51	1.35	1.53	1970	2	3.67	1996	.04	1977
May	2.27	2.13	1.95	1957	20	5.37	1980	.52	1999
Jun	2.17	1.98	2.23	1964	8	4.53	1992	.12	1979
Jul	1.22	1.07	1.43	1992	23	3.74	1993	.00+	1985
Aug	1.22	1.12	2.17	1966	27	3.11	1989	.12	1988
Sep	1.20	1.05	1.21	1986	18	3.15	1985	.00	1990
Oct	1.66	1.42	1.20	1995	11	4.45	1995	.08	1987
Nov	2.66	2.45	1.51	1961	22	5.22	1995	.51	1979
Dec	2.75	2.48	1.41	1964	22	6.68	1996	.46	1985
Ann	23.07	22.68	2.23	Jun 1964	8	6.68	Dec 1996	.00+	Sep 1990

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	16.7	7.5	1.1	.1
Feb	13.9	5.8	1.0	.1
Mar	14.7	6.5	.3	.0
Apr	12.1	5.1	.4	@
May	14.1	6.5	.9	.3
Jun	12.9	6.3	1.1	.1
Jul	7.7	3.4	.5	.1
Aug	7.1	3.4	.7	.1
Sep	8.2	3.9	.4	@
Oct	11.0	5.0	.7	.1
Nov	16.9	8.1	.8	.1
Dec	16.2	8.1	1.2	.1
Ann	151.5	69.6	9.1	1.1

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	.58	.82	1.20	1.55	1.89	2.25	2.66	3.15	3.79	4.81	5.78
Feb	.34	.51	.81	1.09	1.38	1.69	2.05	2.49	3.07	4.01	4.92
Mar	.69	.86	1.09	1.29	1.47	1.66	1.86	2.10	2.40	2.85	3.27
Apr	.37	.51	.73	.93	1.12	1.33	1.55	1.83	2.18	2.75	3.28
May	.76	.97	1.29	1.55	1.81	2.08	2.37	2.71	3.14	3.82	4.44
Jun	.53	.74	1.05	1.33	1.61	1.91	2.24	2.63	3.14	3.95	4.71
Jul	.00	.33	.59	.77	.94	1.11	1.30	1.52	1.80	2.24	2.65
Aug	.14	.23	.40	.57	.75	.96	1.20	1.49	1.90	2.57	3.22
Sep	.15	.30	.50	.67	.85	1.03	1.23	1.47	1.79	2.31	2.79
Oct	.25	.40	.64	.86	1.10	1.36	1.66	2.03	2.52	3.32	4.08
Nov	.80	1.05	1.43	1.76	2.07	2.40	2.77	3.19	3.75	4.61	5.41
Dec	.73	.99	1.39	1.74	2.09	2.45	2.85	3.32	3.94	4.91	5.82
Ann	16.06	17.41	19.14	20.46	21.63	22.77	23.95	25.25	26.83	29.14	31.13

\+ 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: 1956-2001
(3) Derived from 1971-2000 serially complete daily data

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Snow (inches)

Snow Totals

Means/Medians (1)

Extremes (2)

Mean Number of Days (1)

Snow Fall >= Thresholds

Snow Depth >= Thresholds

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median	Highest Daily Snow Fall	Year	Day	Highest Monthly Snow Fall	Year	Highest Daily Snow Depth	Year	Day	Highest Monthly Mean Snow Depth	Year	0.1	1.0	3.0	5.0	10.0	1	3	5	10
Jan	14.6	10.3	6	5	12.0	1982	23	33.0	1982	24	1982	23	16	1979	6.8	5.3	2.0	.4	.1	18.3	15.1	10.6	3.2
Feb	6.4	5.0	4	3	11.0	1986	15	23.0	1975	22	1975	9	14	1979	2.8	2.4	.7	.3	.1	-9.9	-9.9	-9.9	-9.9
Mar	3.4	2.5	1	#	6.0	1978	1	10.5	1971	10	1985	3	4	1985	1.3	1.1	.5	.4	.0	1.9	1.3	.5	.0
Apr	.1	.0	0	0	1.0	1997	4	1.0	1997	0	0	0	0	0	.1	.1	.0	.0	.0	.0	.0	.0	.0
May	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Jun	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Jul	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Aug	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Sep	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	#	.0	0	0	#	1985	7	#	1985	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	4.4	3.3	#	#	8.0	1982	21	13.0	1985	10+	1985	27	2	1985	2.5	1.9	.6	.1	.0	2.5	1.1	.7	.1
Dec	13.3	12.0	3	1	10.0	1971	10	49.4	1977	30	1996	29	14	1996	5.8	4.8	1.7	.8	.1	10.9	5.3	1.4	.0
Ann	42.2	33.1	N/A	N/A	12.0	Jan 1982	23	49.4	Dec 1977	30	Dec 1996	29	16	Jan 1979	19.3	15.6	5.5	2.0	.3	-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	6/22	6/15	6/10	6/06	6/02	5/29	5/24	5/19	5/12
32	5/29	5/24	5/20	5/17	5/14	5/11	5/08	5/04	4/28
28	5/14	5/09	5/05	5/02	4/30	4/27	4/24	4/21	4/16
24	4/29	4/22	4/17	4/13	4/09	4/06	4/01	3/28	3/21
20	4/02	3/25	3/20	3/15	3/11	3/06	3/01	2/24	2/16
16	3/25	3/14	3/07	3/01	2/23	2/16	2/10	2/03	1/23

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	9/01	9/06	9/09	9/11	9/14	9/16	9/19	9/22	9/26
32	9/10	9/14	9/17	9/19	9/22	9/24	9/27	9/30	10/04
28	9/20	9/26	10/01	10/05	10/09	10/13	10/16	10/21	10/28
24	10/02	10/10	10/16	10/20	10/25	10/29	11/03	11/09	11/16
20	10/20	10/28	11/03	11/08	11/13	11/18	11/23	11/29	12/07
16	10/30	11/08	11/14	11/19	11/24	11/29	12/04	12/10	12/19

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	127	119	113	108	103	99	94	88	80
32	154	145	140	135	130	125	120	115	107
28	187	178	172	166	161	156	151	144	136
24	229	218	210	204	198	192	185	177	166
20	283	271	262	254	247	240	232	223	210
16	316	302	291	282	274	265	256	246	231

***** 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	1136	883	755	501	292	122	45	38	200	527	874	1123	6496
60	981	743	600	353	167	48	13	10	105	374	724	968	5086
57	888	659	507	268	109	22	5	3	63	284	634	875	4317
55	826	603	445	215	78	12	2	1	43	228	574	813	3840
50	674	467	300	106	25	1	0	0	12	108	428	658	2779
32	216	95	15	0	0	0	0	0	0	0	63	183	572

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	103	137	283	489	741	923	1155	1155	831	496	179	83	6575
55	0	0	0	14	105	245	443	443	183	10	0	0	1443
57	0	0	0	7	75	195	385	382	144	5	0	0	1193
60	0	0	0	2	40	131	300	296	96	1	0	0	866
65	0	0	0	0	10	54	177	169	40	0	0	0	450
70	0	0	0	0	1	15	90	80	12	0	0	0	198

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	10	81	251	487	676	893	893	577	253	32	0	0	10	91	342	829	1505	2398	3291	3868	4121	4153	4153
45	0	0	20	136	334	526	738	738	430	134	7	0	0	0	20	156	490	1016	1754	2492	2922	3056	3063	3063
50	0	0	0	58	200	378	583	584	287	54	0	0	0	0	0	58	258	636	1219	1803	2090	2144	2144	2144
55	0	0	0	19	99	237	431	431	167	14	0	0	0	0	0	19	118	355	786	1217	1384	1398	1398	1398
60	0	0	0	2	38	126	279	282	78	2	0	0	0	0	0	2	40	166	445	727	805	807	807	807
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	0	11	77	197	326	424	542	544	394	190	11	0	0	11	88	285	611	1035	1577	2121	2515	2705	2716	2716

(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