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: SOUTH PASS CITY, WY **COOP ID: 488385**

Climate Division: WY10 **NWS Call Sign:** **Elevation: 7,840 Feet** **Lat: 42˚28N** **Lon: 108˚48W**

Temperature (˚F)

Month	Mean (1)			Extremes										Degree Days (1) Base Temp 65		Mean Number of Days (3)					
	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	24.0	.3	12.2	70	1949	11	17.9	1994	-45	1922	19	2.0	1979	1639	0	.0	.0	@	23.2	30.9	14.3
Feb	28.0	.8	14.4	53	1932	26	22.1	2000	-39+	1922	2	6.8	1989	1417	0	.0	.0	.1	16.7	28.3	10.0
Mar	33.9	8.5	21.2	72	1979	11	27.9	1986	-33	1943	2	14.7	1976	1358	0	.0	.0	1.2	11.2	30.9	4.0
Apr	45.3	15.9	30.6	75	1977	27	37.1	1992	-22	1920	4	22.6	1975	1033	0	.0	.0	11.5	1.8	27.3	.4
May	57.1	25.2	41.2	78	1936	30	47.0	1994	0	1927	29	36.9	1983	739	0	.0	.0	26.0	.1	24.7	.0
Jun	68.1	32.1	50.1	89	1970	25	56.7	1988	6	1943	3	46.2	1976	448	1	.0	.0	29.4	.0	9.4	.0
Jul	75.5	37.4	56.5	97	1939	9	60.4	1998	18	1921	4	48.2	1993	273	7	.0	.0	31.0	.0	2.6	.0
Aug	74.4	36.0	55.2	90	1940	13	59.4	1994	15	1932	31	50.9	1993	309	5	.0	.0	31.0	.0	3.9	.0
Sep	64.5	27.8	46.2	84+	1998	5	53.3	1998	-5	1926	25	41.2	1971	566	0	.0	.0	28.3	.1	19.7	.0
Oct	52.3	20.3	36.3	80	1976	1	42.1	1988	-26	1935	31	30.9	1984	891	0	.0	.0	21.0	.8	27.7	.4
Nov	35.0	8.6	21.8	65	1927	10	31.7	1999	-30+	1937	27	13.2	2000	1296	0	.0	.0	4.6	9.0	29.8	5.9
Dec	26.3	1.9	14.1	62	1939	10	23.1	1980	-46	1924	19	6.2	1990	1578	0	.0	.0	.8	17.5	31.0	13.3
Ann	48.7	17.9	33.3	97	Jul 1939	9	60.4	Jul 1998	-46	Dec 1924	19	2.0	Jan 1979	11547	13	.0	.0	184.9	80.4	266.2	48.3

\+ 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: 1915-2001

(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	1.69	1.25	2.30	1949	11	7.62	1972	.05	1992
Feb	1.01	.76	1.17	1976	9	2.45	1986	.00	1991
Mar	1.46	1.46	1.18	1978	5	3.74	1997	.13	1999
Apr	1.44	1.50	1.37+	1945	13	3.25	1999	.21	1992
May	2.18	1.97	2.00	1952	16	4.66	1981	.35	1994
Jun	1.15	.98	1.49	1947	11	3.67	1993	.00	1979
Jul	.93	.83	1.82	1926	9	2.42	1993	.00	1980
Aug	.90	.75	1.29	1933	26	3.48	1979	.12	1985
Sep	1.17	1.06	1.60	1978	18	4.00	1973	.02	1979
Oct	1.18	1.18	1.50+	1998	4	2.57	1994	.06	1978
Nov	1.07	.94	1.09	1942	20	2.42	1994	.00	1976
Dec	1.35	1.00	1.44	1964	22	5.96	1996	.12	1986
Ann	15.53	15.31	2.30	Jan 1949	11	7.62	Jan 1972	.00+	Feb 1991

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	8.8	4.5	.5	.2
Feb	5.1	2.3	.4	@
Mar	8.6	2.9	.4	.1
Apr	9.7	4.4	.3	@
May	10.3	4.9	.7	.1
Jun	7.7	2.8	.3	.1
Jul	8.2	2.5	.4	@
Aug	6.0	2.7	.3	@
Sep	5.3	2.8	.3	@
Oct	4.3	2.2	.3	.1
Nov	8.3	2.7	.2	.0
Dec	8.2	3.1	.3	@
Ann	90.5	37.8	4.4	.6

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	.24	.38	.62	.86	1.10	1.37	1.68	2.06	2.58	3.41	4.22
Feb	.10	.22	.39	.54	.69	.85	1.03	1.25	1.53	2.00	2.44
Mar	.41	.55	.76	.94	1.12	1.30	1.51	1.75	2.07	2.56	3.02
Apr	.47	.61	.81	.98	1.15	1.32	1.50	1.72	2.01	2.44	2.85
May	.68	.89	1.19	1.46	1.71	1.98	2.27	2.61	3.05	3.73	4.37
Jun	.13	.27	.47	.63	.80	.98	1.18	1.42	1.74	2.25	2.73
Jul	.14	.26	.42	.55	.68	.82	.97	1.14	1.38	1.75	2.10
Aug	.12	.19	.32	.45	.58	.72	.89	1.10	1.39	1.85	2.30
Sep	.12	.21	.37	.53	.71	.91	1.14	1.43	1.83	2.48	3.13
Oct	.23	.33	.51	.67	.83	1.00	1.20	1.44	1.76	2.27	2.75
Nov	.16	.30	.49	.63	.78	.94	1.11	1.32	1.59	2.01	2.41
Dec	.13	.23	.42	.60	.81	1.04	1.31	1.64	2.11	2.88	3.63
Ann	10.27	11.26	12.54	13.53	14.41	15.27	16.16	17.16	18.37	20.14	21.68

+ 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: 1915-2001
(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	17.1	16.3	21	13	10.0	1976	9	33.5	1997	69	1979	31	62	1979	8.4	7.0	3.1	1.2	.1	-9.9	-9.9	-9.9	-9.9
Feb	14.3	15.2	17	17	14.0	1976	9	27.5	1976	74	1979	7	67	1979	5.7	4.7	2.3	.9	.2	-9.9	-9.9	-9.9	-9.9
Mar	16.8	16.8	12	9	28.1	1980	30	28.1	1980	63	1979	2	42	1979	7.2	5.2	1.9	1.1	.2	-9.9	-9.9	-9.9	-9.9
Apr	12.4	13.9	3	#	15.0	1999	24	22.2	1995	26	1979	12	13	1979	6.9	4.9	1.6	.5	.2	-9.9	-9.9	-9.9	-9.9
May	11.6	7.9	1	#	18.6	1978	5	46.4	1978	47	1978	7	11	1978	3.5	3.1	1.5	.7	.1	2.3	1.7	1.3	.8
Jun	.5	.0	#	0	2.0	1993	3	2.0+	1995	#+	1995	9	#+	1995	.5	.3	.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	1.4	.0	#	0	12.0	2000	23	12.0	2000	14	2000	24	1	2000	.8	.5	.3	.1	.1	.3	.1	.0	.0
Oct	8.4	6.0	1	#	22.0	1976	26	25.5	1976	20	1976	26	3+	1998	3.1	2.1	.9	.6	.2	2.5	.8	.6	.3
Nov	9.4	10.1	3	2	8.2	1978	10	24.0	1978	19	1978	26	12	1978	4.9	3.7	1.6	.6	.0	-9.9	-9.9	-9.9	-9.9
Dec	15.5	13.8	9	5	12.0	1994	5	35.5	1992	50	1978	31	38	1978	7.3	5.9	2.8	1.1	.3	-9.9	-9.9	-9.9	-9.9
Ann	107.4	100.0	N/A	N/A	28.1	Mar 1980	30	46.4	May 1978	74	Feb 1979	7	67	Feb 1979	48.3	37.4	16.0	6.8	1.4	-9.9	-9.9	-9.9	-9.9

+ Also occurred on an earlier date(s) #Denotes trace amounts

(1) Derived from Snow Climatology and 1971-2000 daily data

@ Denotes mean number of days greater than 0 but less than .05

(2) Derived from 1971-2000 daily data

-9/-9.9 represents missing values

Annual statistics for Mean/Median snow depths are not appropriate

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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	8/01	7/26	7/22	7/19	7/15	7/12	7/08	7/04	6/28
32	7/24	7/15	7/08	7/02	6/27	6/22	6/16	6/10	5/31
28	7/05	6/27	6/21	6/16	6/12	6/07	6/03	5/28	5/20
24	6/24	6/16	6/10	6/05	6/01	5/27	5/22	5/16	5/08
20	6/12	6/04	5/29	5/24	5/20	5/15	5/10	5/04	4/26
16	5/27	5/19	5/14	5/09	5/05	4/30	4/25	4/20	4/12

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	7/31	8/04	8/08	8/12	8/15	8/18	8/22	8/26	9/01
32	8/04	8/10	8/15	8/19	8/23	8/26	8/30	9/04	9/11
28	8/14	8/20	8/24	8/28	9/01	9/04	9/08	9/12	9/18
24	8/25	8/31	9/04	9/08	9/12	9/15	9/19	9/23	9/29
20	9/05	9/11	9/15	9/19	9/22	9/26	9/29	10/04	10/10
16	9/10	9/18	9/23	9/28	10/02	10/07	10/11	10/17	10/25

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	60	50	42	36	30	24	18	10	0
32	98	84	73	64	56	47	38	28	14
28	113	102	93	87	80	74	67	58	47
24	136	124	116	109	102	95	88	80	68
20	159	148	139	132	125	118	111	102	90
16	185	173	164	157	150	143	136	127	115

***** 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	1639	1417	1358	1033	739	448	273	309	566	891	1296	1578	11547
60	1484	1277	1203	883	584	305	145	176	418	736	1146	1423	9780
57	1391	1193	1110	793	491	226	90	114	332	643	1056	1330	8769
55	1329	1137	1048	733	429	179	60	81	277	581	996	1268	8118
50	1174	997	893	583	281	86	15	26	157	426	846	1113	6597
32	616	493	346	141	9	0	0	0	0	36	329	562	2532

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	0	0	11	98	294	542	757	719	424	169	24	7	3045
55	0	0	0	0	1	32	104	88	11	0	0	0	236
57	0	0	0	0	0	19	72	59	6	0	0	0	156
60	0	0	0	0	0	7	34	27	2	0	0	0	70
65	0	0	0	0	0	1	7	5	0	0	0	0	13
70	0	0	0	0	0	0	0	0	0	0	0	0	0

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	0	35	145	422	636	561	261	85	2	0	0	0	0	35	180	602	1238	1799	2060	2145	2147	2147
45	0	0	0	9	60	285	481	408	145	25	0	0	0	0	0	9	69	354	835	1243	1388	1413	1413	1413
50	0	0	0	0	12	164	330	256	55	2	0	0	0	0	0	0	12	176	506	762	817	819	819	819
55	0	0	0	0	0	74	187	118	10	0	0	0	0	0	0	0	0	74	261	379	389	389	389	389
60	0	0	0	0	0	29	76	30	0	0	0	0	0	0	0	0	0	29	105	135	135	135	135	135
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	0	0	1	43	157	303	435	410	260	124	11	0	0	0	1	44	201	504	939	1349	1609	1733	1744	1744

(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