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: LARAMIE RGNL AP, WY **COOP ID: 485415**

Climate Division: WY10 **NWS Call Sign: LAR** **Elevation: 7,266 Feet** **Lat: 41˚19N** **Lon: 105˚40W**

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	31.7	9.0	20.4	59+	1997	2	28.4	1986	-50	1963	12	9.2	1979	1383	0	.0	.0	1.4	14.4	30.6	7.7
Feb	35.1	11.6	23.4	63	1954	8	31.2	2000	-38	1951	1	12.2	1989	1167	0	.0	.0	2.7	10.7	27.8	5.4
Mar	41.9	18.1	30.0	68	1978	30	37.6	1986	-24	1969	9	23.5	1973	1086	0	.0	.0	8.8	6.1	30.0	1.7
Apr	50.2	24.1	37.2	76	1992	30	44.1	1981	-14	1975	2	28.1	1983	837	0	.0	.0	16.6	2.3	25.8	.4
May	60.8	33.2	47.0	95	1980	22	51.1	1994	11	1954	2	41.7	1983	559	0	.0	@	26.5	.1	13.5	.0
Jun	72.6	41.6	57.1	94	1954	23	63.4	1988	22+	1984	4	52.7	1998	249	13	.0	.3	29.6	.0	1.8	.0
Jul	79.1	47.3	63.2	94	1982	22	66.2	2000	30	1968	1	59.8	1992	90	34	.0	1.0	31.0	.0	@	.0
Aug	77.4	46.0	61.7	94	1979	5	65.5	2000	28	1978	19	58.3	1974	124	21	.0	.3	31.0	.0	.1	.0
Sep	68.3	37.4	52.9	90+	1978	6	59.2	1998	-2	1985	30	48.4	1974	369	3	.0	.1	28.5	.1	6.7	@
Oct	56.1	27.6	41.9	78+	1963	4	46.9	1988	-18	1993	30	36.0	1984	719	0	.0	.0	23.1	1.2	22.2	.4
Nov	40.5	16.3	28.4	70	1999	15	38.4	1999	-26	1993	25	14.4	2000	1099	0	.0	.0	8.4	8.3	28.3	3.5
Dec	32.6	9.9	21.3	61	1980	16	32.8	1980	-34	1989	22	12.7	1978	1356	0	.0	.0	2.2	14.0	30.4	7.0
Ann	53.9	26.8	40.4	95	May 1980	22	66.2	Jul 2000	-50	Jan 1963	12	9.2	Jan 1979	9038	71	.0	1.7	209.8	57.2	217.2	26.1

\+ 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

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: LARAMIE RGNL AP, WY

COOP ID: 485415

Climate Division: WY10 **NWS Call Sign: LAR** **Elevation: 7,266 Feet** **Lat: 41˚19N** **Lon: 105˚40W**

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	.38	.32	1.00	1963	18	1.05	1992	.03	1986
Feb	.46	.36	1.20	1971	2	1.58	1993	.02	1999
Mar	.79	.61	1.38	1977	10	2.43	1983	.22	1995
Apr	1.06	.94	2.01	1983	21	3.71	1983	.27	1989
May	1.67	1.45	2.67	2000	17	3.85	2000	.17	1974
Jun	1.33	.82	1.87	1991	6	4.75	1991	.25	1990
Jul	1.56	1.05	2.40	1977	24	4.43	1998	.17	1997
Aug	1.23	1.15	2.28	1958	24	2.25	1979	.38	1985
Sep	.99	.80	1.16	1973	11	2.36	1995	.05	1987
Oct	.80	.65	1.34	1962	5	2.69	1998	.08	1971
Nov	.64	.42	.77+	1987	15	2.62	1983	.07	2000
Dec	.46	.26	1.15	1982	24	1.87	1982	.04	1980
Ann	11.37	11.15	2.67	May 2000	17	4.75	Jun 1991	.02	Feb 1999

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	5.5	1.2	.1	.0
Feb	5.3	1.3	.1	@
Mar	6.7	2.4	.3	@
Apr	7.7	3.2	.3	@
May	9.9	4.8	.6	.1
Jun	7.6	3.6	.5	.2
Jul	9.1	4.1	.7	.2
Aug	9.3	3.9	.2	.1
Sep	6.3	2.7	.4	.1
Oct	5.8	2.5	.3	@
Nov	5.9	2.2	.2	.0
Dec	5.3	1.4	.1	@
Ann	84.4	33.3	3.8	.7

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	.09	.15	.20	.25	.31	.38	.46	.57	.75	.92
Feb	.05	.08	.14	.20	.27	.35	.44	.56	.71	.97	1.22
Mar	.14	.21	.32	.43	.54	.66	.80	.96	1.18	1.53	1.87
Apr	.29	.39	.55	.68	.81	.95	1.10	1.28	1.52	1.88	2.23
May	.34	.49	.73	.96	1.19	1.43	1.70	2.03	2.47	3.17	3.84
Jun	.20	.31	.50	.69	.88	1.09	1.33	1.62	2.02	2.67	3.29
Jul	.21	.34	.56	.78	1.00	1.26	1.55	1.90	2.39	3.18	3.94
Aug	.47	.58	.74	.88	1.01	1.14	1.28	1.45	1.66	1.99	2.28
Sep	.09	.17	.30	.44	.59	.75	.95	1.20	1.54	2.11	2.67
Oct	.08	.13	.24	.36	.48	.61	.78	.98	1.26	1.72	2.18
Nov	.06	.11	.20	.29	.39	.49	.62	.78	1.00	1.37	1.73
Dec	.03	.06	.11	.17	.24	.32	.42	.55	.73	1.03	1.32
Ann	7.08	7.87	8.90	9.70	10.41	11.12	11.85	12.67	13.68	15.16	16.46

+ 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: LARAMIE RGNL AP, WY **COOP ID: 485415**

Climate Division: WY10 **NWS Call Sign: LAR** **Elevation: 7,266 Feet** **Lat: 41°19N** **Lon: 105°40W**

Snow (inches)

Snow Totals

Means/Medians (1)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	5.4	4.5	2	1
Feb	5.7	3.6	2	1
Mar	9.3	7.3	1	1
Apr	8.2	6.8	1	1
May	3.5	2.4	#	1
Jun	.4	.0	#	0
Jul	.0	.0	#	0
Aug	.0	.0	0	0
Sep	1.0	.0	#	0
Oct	3.9	2.7	#	0
Nov	7.9	5.6	1	1
Dec	6.8	4.0	2	1
Ann	52.1	36.9	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	6.5	1980	27	16.7	1980	15+	1980	31	8	1973
Feb	13.4	1989	2	27.6	1989	14	1989	3	6+	1993
Mar	13.8	1973	14	26.3	1973	16+	1973	16	5	1973
Apr	18.1	1983	21	33.9	1983	16	1983	22	3+	1983
May	7.9	1978	17	12.0	1995	20	1971	10	1	1971
Jun	6.0	1974	8	6.0	1974	1	1979	9	#	2000
Jul	.0	0	0	.0	0	0	0	0	#	1979
Aug	.0	0	0	.0	0	0	0	0	0	0
Sep	4.0	1974	11	6.0	1971	3+	1985	29	#	1999
Oct	8.3	1972	21	19.1	1972	8	1972	30	1+	1996
Nov	9.3	1983	25	31.7	1983	15+	1973	5	4+	2000
Dec	18.2	1982	24	30.7	1982	20	1982	25	8	1972
Ann	18.2	Dec 1982	24	33.9	Apr 1983	20+	Dec 1982	25	8+	Jan 1973

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	5.4	2.0	.3	.1	.0
Feb	5.2	1.9	.4	.2	@
Mar	6.3	3.0	.9	.3	.1
Apr	5.4	2.6	.9	.3	@
May	2.3	1.2	.3	.1	.0
Jun	.2	.2	@	@	.0
Jul	.0	.0	.0	.0	.0
Aug	.0	.0	.0	.0	.0
Sep	.7	.4	.1	.0	.0
Oct	2.6	1.3	.4	.2	.0
Nov	5.6	2.8	.7	.2	.0
Dec	5.1	2.1	.5	.2	.1
Ann	38.8	17.5	4.5	1.6	.2

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	16.6	9.4	5.0	.7
Feb	13.7	6.7	3.0	.7
Mar	10.0	4.7	2.2	.5
Apr	5.3	1.9	.9	.1
May	1.0	.3	.2	@
Jun	@	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.4	.1	.0	.0
Oct	2.1	.7	.2	.0
Nov	11.4	5.7	2.4	.2
Dec	16.0	9.0	4.5	.8
Ann	76.5	38.5	18.4	3.0

+ 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: LARAMIE RGNL AP, WY **COOP ID: 485415**

Climate Division: WY10 **NWS Call Sign: LAR** **Elevation: 7,266 Feet** **Lat: 41˚19N** **Lon: 105˚40W**

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	7/10	7/04	6/30	6/27	6/24	6/20	6/17	6/13	6/07
32	6/25	6/19	6/15	6/11	6/07	6/04	5/31	5/26	5/20
28	6/08	6/02	5/28	5/25	5/21	5/18	5/14	5/10	5/04
24	5/24	5/19	5/15	5/12	5/09	5/05	5/02	4/28	4/23
20	5/12	5/07	5/04	5/01	4/28	4/26	4/23	4/19	4/15
16	5/05	4/29	4/25	4/22	4/19	4/16	4/12	4/09	4/03

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	8/17	8/22	8/26	8/30	9/02	9/05	9/08	9/12	9/18
32	9/01	9/06	9/09	9/11	9/14	9/16	9/19	9/22	9/27
28	9/07	9/11	9/14	9/17	9/19	9/21	9/24	9/27	10/01
24	9/11	9/17	9/20	9/24	9/27	9/30	10/03	10/07	10/12
20	9/16	9/22	9/27	10/01	10/05	10/09	10/13	10/18	10/24
16	9/29	10/05	10/09	10/13	10/16	10/19	10/23	10/27	11/02

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	91	84	78	74	69	65	60	55	47
32	121	113	107	103	98	93	89	83	75
28	140	133	128	124	120	116	111	106	99
24	164	156	150	145	141	136	131	125	117
20	184	175	169	164	159	154	149	143	134
16	205	196	190	184	179	174	169	163	154

***** 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: LARAMIE RGNL AP, WY **COOP ID: 485415**

Climate Division: WY10 **NWS Call Sign: LAR** **Elevation: 7,266 Feet** **Lat: 41˚19N** **Lon: 105˚40W**

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	1383	1167	1086	837	559	249	90	124	369	719	1099	1356	9038
60	1228	1027	931	687	405	135	21	40	233	564	949	1201	7421
57	1135	943	838	597	316	84	6	16	164	471	859	1108	6537
55	1073	887	776	538	261	58	2	8	124	410	799	1046	5982
50	918	747	621	398	141	17	0	1	51	261	654	891	4700
32	391	279	154	59	2	0	0	0	0	12	220	363	1480

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	30	37	90	212	466	754	967	920	625	316	112	30	4559
55	0	0	0	2	12	121	257	215	59	0	0	0	666
57	0	0	0	0	5	88	198	161	39	0	0	0	491
60	0	0	0	0	1	49	121	92	18	0	0	0	281
65	0	0	0	0	0	13	34	21	3	0	0	0	71
70	0	0	0	0	0	2	4	1	0	0	0	0	7

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	20	80	254	531	739	689	414	152	30	1	0	0	20	100	354	885	1624	2313	2727	2879	2909	2910
45	0	0	1	34	137	383	584	534	277	68	1	0	0	0	1	35	172	555	1139	1673	1950	2018	2019	2019
50	0	0	0	5	59	245	429	379	158	16	0	0	0	0	0	5	64	309	738	1117	1275	1291	1291	1291
55	0	0	0	0	12	130	276	228	66	0	0	0	0	0	0	0	12	142	418	646	712	712	712	712
60	0	0	0	0	0	48	132	96	17	0	0	0	0	0	0	0	0	48	180	276	293	293	293	293
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	0	4	27	84	194	354	474	446	292	141	29	1	0	4	31	115	309	663	1137	1583	1875	2016	2045	2046

(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