

# Climatology of the United States

## No. 20

### 1971-2000

**Station: PINEDALE, WY**

**COOP ID: 487260**

**Climate Division: WY 3**

**NWS Call Sign:**

**Elevation: 7,195 Feet Lat: 42° 53N**

**Lon: 109° 52W**

### 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	25.8	-1	12.9	55	1981	22	24.4	1981	-44	1963	12	4.1	1979	1617	0	.0	.0	.1	23.0	31.0	16.3
Feb	29.9	2.2	16.1	51+	1988	29	23.2	1995	-42+	1982	5	6.4	1993	1370	0	.0	.0	.1	16.4	28.2	12.3
Mar	38.6	12.0	25.3	64	1963	30	33.1	1992	-32	1965	25	17.6	1976	1231	0	.0	.0	2.2	5.4	30.9	4.4
Apr	49.4	21.3	35.4	77	1949	28	40.3	1992	-13	1966	20	28.6	1975	890	0	.0	.0	14.4	.8	28.5	.5
May	60.2	29.0	44.6	85	1949	27	49.2	1994	-2+	1967	15	41.0	1995	632	0	.0	.0	27.3	.0	22.3	.0
Jun	70.2	36.9	53.6	90	1952	14	58.5	1988	18	1984	2	48.5	1998	345	2	.0	.0	29.7	.0	6.8	.0
Jul	77.3	41.7	59.5	94	1955	19	63.0	1975	23	1951	3	52.2	1993	186	14	.0	.0	31.0	.0	1.0	.0
Aug	76.4	38.2	57.3	91+	2001	6	61.6	1983	18	1964	30	54.2+	1993	245	7	.0	.1	31.0	.0	5.2	.0
Sep	66.8	30.4	48.6	89	1950	4	53.5	1998	8	1970	25	44.4	1985	492	0	.0	.0	28.5	@	19.2	.0
Oct	54.9	22.1	38.5	86	1967	9	42.6	1988	-6	1972	31	32.3	1984	822	0	.0	.0	22.6	.6	29.0	.2
Nov	36.7	11.0	23.9	67	1978	3	32.4	1999	-28+	1985	23	15.4	2000	1235	0	.0	.0	4.0	10.3	29.8	5.3
Dec	27.1	1.7	14.4	54+	1995	1	25.7	1980	-49	1990	22	2.9	1990	1569	0	.0	.0	.3	21.2	31.0	14.2
Ann	51.1	20.5	35.8	94	Jul 1955	19	63.0	Jul 1975	-49	Dec 1990	22	2.9	Dec 1990	10634	23	.0	.1	191.2	77.7	262.9	53.2

+ 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/normal/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormals.html)

Issue Date: February 2004

(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

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Lon: 109° 52W

### Precipitation (inches)

		Precipitation Totals								Mean Number of Days (3)				Precipitation Probabilities (1) Probability that the monthly/annual precipitation will be equal to or less than the indicated amount											
		Means/Medians(1)		Extremes						Daily Precipitation				Monthly/Annual Precipitation vs Probability Levels These values were determined from the incomplete gamma distribution											
Month	Mean	Median	Highest Daily(2)	Year	Day	Highest Monthly(1)	Year	Lowest Monthly(1)	Year	>= 0.01	>= 0.10	>= 0.50	>= 1.00	.05	.10	.20	.30	.40	.50	.60	.70	.80	.90	.95	
Jan	.71	.67	.57	1950	18	1.90	1980	.06	1984	8.0	2.6	@	.0	.16	.22	.33	.42	.52	.62	.73	.87	1.04	1.33	1.60	
Feb	.53	.54	.50	1960	25	1.55	1986	.06	1977	7.1	1.7	.0	.0	.10	.15	.23	.30	.37	.45	.54	.65	.79	1.02	1.24	
Mar	.74	.70	.77+	1983	31	1.49	1983	.18	1992	7.7	2.1	.2	.0	.21	.28	.38	.48	.57	.66	.77	.89	1.05	1.30	1.54	
Apr	.92	.81	1.02	1960	28	2.37	1999	.24	1996	7.7	3.0	.2	.0	.23	.32	.45	.57	.69	.81	.95	1.12	1.33	1.67	1.99	
May	1.73	1.49	1.78	1968	23	3.57	1991	.48	2000	11.2	5.5	.5	@	.47	.63	.88	1.10	1.32	1.54	1.79	2.08	2.47	3.07	3.63	
Jun	1.06	.80	1.44	1998	4	3.93	1998	.25	1981	8.7	3.0	.3	.1	.15	.24	.39	.54	.69	.86	1.05	1.29	1.61	2.13	2.63	
Jul	1.15	1.12	1.33	1984	22	2.98	1984	.00	1994	8.2	3.7	.4	@	.10	.23	.42	.58	.76	.94	1.16	1.42	1.76	2.33	2.87	
Aug	1.04	1.00	1.27	1968	9	2.54	1983	.05	1988	8.7	3.3	.2	.0	.24	.33	.49	.62	.76	.91	1.07	1.27	1.52	1.93	2.32	
Sep	1.18	1.02	1.14	1991	7	3.50	1982	.00	1974	7.4	3.5	.6	.1	.12	.26	.46	.63	.81	.99	1.20	1.46	1.80	2.35	2.87	
Oct	.77	.59	1.20	1960	9	2.12	1971	.03	1978	6.4	2.6	.2	.0	.06	.11	.22	.32	.44	.58	.74	.94	1.22	1.69	2.16	
Nov	.76	.76	.64	1985	13	2.06	1983	.02	1974	7.6	2.6	.1	.0	.12	.18	.29	.39	.50	.62	.76	.92	1.14	1.51	1.85	
Dec	.60	.47	.64	1968	25	1.94	1996	.00	1986	8.0	2.1	.1	.0	.03	.09	.18	.27	.36	.46	.59	.74	.94	1.28	1.61	
Ann	11.19	11.05	1.78	May 1968	23	3.93	Jun 1998	.00+	Jul 1994	96.7	35.7	2.8	.2	6.41	7.26	8.39	9.28	10.08	10.87	11.71	12.65	13.81	15.53	17.05	

+ 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

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Climate Division: WY 3

NWS Call Sign:

Elevation: 7,195 Feet

Lat: 42° 53N

Lon: 109° 52W

Snow (inches)																							
Snow Totals															Mean Number of Days (1)								
Means/Medians (1)					Extremes (2)										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	10.3	9.4	9	9	12.0	1972	11	23.1	1980	33	1972	22	21	1972	7.9	4.0	1.1	.5	.1	28.2	23.8	18.8	11.1
Feb	9.8	8.4	10	11	11.0	1996	26	30.6	1976	29	1993	27	23+	1993	7.5	3.6	.8	.3	@	26.6	20.8	17.7	9.9
Mar	9.1	8.3	8	6	13.0	1977	25	24.3	1996	28	1972	3	19	1973	6.3	3.1	.9	.4	.1	19.3	13.7	10.8	3.8
Apr	5.6	4.7	1	#	8.0	1971	21	14.5	1983	21	1973	1	5	1973	4.0	2.3	.7	.2	.0	4.2	1.9	1.0	.1
May	3.0	1.2	#	0	12.0	1983	11	22.5	1983	12	1983	11	4	1978	1.7	1.0	.3	.1	@	.5	.2	@	@
Jun	.5	.0	#	0	4.5	1998	4	7.5	1998	3	1998	4	#	1998	.3	.2	.1	.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	1.0	.0	#	0	8.0	1973	2	8.0	1973	4	1978	18	#+	1985	.4	.2	.1	@	.0	.1	@	.0	.0
Oct	3.6	2.7	#	#	6.0	1975	8	13.0	1975	6	1994	4	1	1991	2.1	1.2	.5	.2	.0	1.4	.6	.1	.0
Nov	9.1	8.7	2	1	9.0	1985	13	30.2	1985	17	1985	30	8	1985	7.1	3.8	.9	.3	.0	13.2	5.9	3.0	.6
Dec	9.2	7.2	5	4	10.0	1973	28	29.8	1996	23	1985	5	17	1985	8.1	4.2	.7	.1	.1	24.9	14.4	9.9	4.9
Ann	61.2	50.6	N/A	N/A	13.0	Mar 1977	25	30.6	Feb 1976	33	Jan 1972	22	23+	Feb 1993	45.4	23.6	6.1	2.1	.3	118.4	81.3	61.3	30.4

+ 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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<b>Freeze Data</b>									
<b>Spring Freeze Dates (Month/Day)</b>									
<b>Temp (F)</b>	<b>Probability of later date in spring (thru Jul 31) than indicated(*)</b>								
	<b>.10</b>	<b>.20</b>	<b>.30</b>	<b>.40</b>	<b>.50</b>	<b>.60</b>	<b>.70</b>	<b>.80</b>	<b>.90</b>
<b>36</b>	8/03	7/29	7/25	7/21	7/18	7/15	7/11	7/07	7/02
<b>32</b>	7/21	7/15	7/11	7/08	7/05	7/02	6/28	6/25	6/19
<b>28</b>	6/30	6/24	6/20	6/16	6/13	6/09	6/05	6/01	5/26
<b>24</b>	6/15	6/09	6/04	5/31	5/27	5/23	5/19	5/14	5/08
<b>20</b>	6/01	5/25	5/21	5/17	5/13	5/10	5/06	5/01	4/25
<b>16</b>	5/15	5/10	5/06	5/03	4/29	4/26	4/23	4/19	4/13
<b>Fall Freeze Dates (Month/Day)</b>									
<b>Temp (F)</b>	<b>Probability of earlier date in fall (beginning Aug 1) than indicated(*)</b>								
	<b>.10</b>	<b>.20</b>	<b>.30</b>	<b>.40</b>	<b>.50</b>	<b>.60</b>	<b>.70</b>	<b>.80</b>	<b>.90</b>
<b>36</b>	7/29	7/31	8/03	8/05	8/07	8/09	8/11	8/14	8/17
<b>32</b>	8/02	8/07	8/12	8/15	8/18	8/22	8/25	8/29	9/04
<b>28</b>	8/12	8/17	8/21	8/25	8/28	8/31	9/04	9/08	9/13
<b>24</b>	8/25	8/31	9/04	9/07	9/10	9/13	9/17	9/21	9/26
<b>20</b>	9/02	9/08	9/11	9/15	9/18	9/21	9/24	9/28	10/04
<b>16</b>	9/14	9/19	9/23	9/26	9/29	10/02	10/06	10/10	10/15
<b>Freeze Free Period</b>									
<b>Temp (F)</b>	<b>Probability of longer than indicated freeze free period (Days)</b>								
	<b>.10</b>	<b>.20</b>	<b>.30</b>	<b>.40</b>	<b>.50</b>	<b>.60</b>	<b>.70</b>	<b>.80</b>	<b>.90</b>
<b>36</b>	42	34	28	24	19	15	10	5	0
<b>32</b>	70	61	54	49	44	38	33	26	17
<b>28</b>	99	91	85	80	76	71	66	60	52
<b>24</b>	132	123	116	111	106	100	95	88	79
<b>20</b>	154	145	138	132	127	122	116	109	99
<b>16</b>	175	167	161	157	152	148	143	138	130

\* 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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<b>Degree Days to Selected Base Temperatures (°F)</b>													
<b>Base</b>	<b>Heating Degree Days (1)</b>												
<b>Below</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug</b>	<b>Sep</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Ann</b>
<b>65</b>	1617	1370	1231	890	632	345	186	245	492	822	1235	1569	10634
<b>60</b>	1462	1230	1076	740	477	207	82	122	345	667	1085	1414	8907
<b>57</b>	1369	1146	983	650	385	138	40	69	262	574	995	1321	7932
<b>55</b>	1307	1090	921	590	324	100	21	43	211	512	935	1259	7313
<b>50</b>	1152	950	766	442	186	33	3	9	105	358	785	1104	5893
<b>32</b>	596	452	252	61	2	0	0	0	0	19	281	561	2224

<b>Base</b>	<b>Cooling Degree Days (1)</b>												
<b>Above</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug</b>	<b>Sep</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Ann</b>
<b>32</b>	2	7	44	161	392	647	851	785	498	220	36	15	3658
<b>55</b>	0	0	0	0	2	57	160	115	19	0	0	0	353
<b>57</b>	0	0	0	0	1	36	116	79	10	0	0	0	242
<b>60</b>	0	0	0	0	0	15	65	38	3	0	0	0	121
<b>65</b>	0	0	0	0	0	2	14	7	0	0	0	0	23
<b>70</b>	0	0	0	0	0	0	0	0	0	0	0	0	0

<b>Growing Degree Units (2)</b>																								
<b>Base</b>	<b>Growing Degree Units (Monthly)</b>												<b>Growing Degree Units (Accumulated Monthly)</b>											
	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug</b>	<b>Sep</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug</b>	<b>Sep</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>
<b>40</b>	0	0	0	41	187	421	618	547	289	73	1	0	0	0	0	41	228	649	1267	1814	2103	2176	2177	2177
<b>45</b>	0	0	0	12	81	280	463	392	160	18	0	0	0	0	0	12	93	373	836	1228	1388	1406	1406	1406
<b>50</b>	0	0	0	0	19	152	310	242	62	1	0	0	0	0	0	19	171	481	723	785	786	786	786	786
<b>55</b>	0	0	0	0	0	55	162	100	16	0	0	0	0	0	0	0	55	217	317	333	333	333	333	333
<b>60</b>	0	0	0	0	0	11	50	23	0	0	0	0	0	0	0	0	0	11	61	84	84	84	84	84
<b>Base</b>	<b>Growing Degree Units for Corn (Monthly)</b>												<b>Growing Degree Units for Corn (Accumulated Monthly)</b>											
<b>50/86</b>	0	0	2	59	185	320	440	419	271	124	12	0	0	0	2	61	246	566	1006	1425	1696	1820	1832	1832

(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.  
Complete documentation for the 1971-2000 Normals is available on the internet from:  
[www.ncdc.noaa.gov/oa/climate/normal/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normal/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/normal.html](http://www.ncdc.noaa.gov/normal.html)  
U.S. Climate Normals 1971-2000-Products Clim20, [www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html)  
Snow Climatology Project Description, [www.ncdc.noaa.gov/oa/climate/monitoring/snowclim/mainpage.html](http://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](http://www1.ncdc.noaa.gov/pub/data/special/serialcomplete_jam_0900.pdf)