

Climatology of the United States

No. 20

1971-2000

Station: SUNDANCE, WY

COOP ID: 488705

Climate Division: WY 6

NWS Call Sign:

Elevation: 4,750 Feet Lat: 44° 24N

Lon: 104° 23W

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	30.8	7.3	19.1	65	1981	23	30.4	1981	-39	1916	12	5.9	1979	1423	0	.0	.0	1.0	13.7	30.4	7.7
Feb	35.7	12.5	24.1	66	1932	26	33.5	1992	-42	1936	8	11.0	1989	1145	0	.0	.0	2.8	8.4	27.4	4.3
Mar	44.5	20.7	32.6	74	1993	24	39.7	1986	-24	1945	5	24.1	1996	1004	0	.0	.0	12.0	5.0	27.0	1.7
Apr	54.5	29.6	42.1	84	1992	30	48.2	1987	-11	1945	3	35.2	1997	689	0	.0	.0	20.5	1.2	18.3	.1
May	65.5	39.2	52.4	101	1934	28	57.3	1994	0+	1929	20	47.4	1996	396	4	.0	.1	28.5	.0	5.6	.0
Jun	76.6	48.2	62.4	100	1961	29	71.8	1988	25	1919	2	55.3	1998	147	67	.0	1.5	29.8	.0	.4	.0
Jul	84.5	53.9	69.2	105	1936	5	73.1	1988	30	1993	10	61.9	1993	42	172	.2	6.3	31.0	.0	@	.0
Aug	83.2	52.7	68.0	101+	2001	6	74.8	1983	31	1966	22	62.4	1974	67	157	@	4.1	31.0	.0	.0	.0
Sep	72.2	42.3	57.3	99+	1933	4	63.0	1990	0	1917	18	51.4	1986	260	28	.0	1.0	28.8	.1	3.4	.0
Oct	59.6	31.6	45.6	89	1932	1	48.8	1973	-17	1925	27	41.9	1971	601	0	.0	.0	24.1	.8	13.8	@
Nov	41.8	18.8	30.3	77	1917	7	43.2	1999	-23+	1959	17	15.3	1985	1041	0	.0	.0	8.3	6.8	25.6	1.5
Dec	32.8	10.1	21.5	65	1923	15	29.9	1999	-40	1983	24	7.1	1983	1351	0	.0	.0	2.1	13.0	29.7	5.1
Ann	56.8	30.6	43.7	105	Jul 1936	5	74.8	Aug 1983	-42	Feb 1936	8	5.9	Jan 1979	8166	428	.2	13.0	219.9	49.0	181.6	20.4

+ 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

Issue Date: February 2004

(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

085-A

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: SUNDANCE, WY

COOP ID: 488705

Climate Division: WY 6

NWS Call Sign:

Elevation: 4,750 Feet Lat: 44°24N

Lon: 104°23W

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	Med-ian	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	.69	.56	1.14	1949	5	1.91	1994	.23	1973	8.8	2.4	.1	.0	.19	.25	.35	.44	.53	.62	.72	.83	.99	1.23	1.46
Feb	.68	.61	1.00	1939	11	1.91	1997	.00	1983	6.9	2.2	.1	.0	.09	.18	.30	.39	.49	.59	.70	.83	1.01	1.29	1.55
Mar	.97	.98	1.60	1929	14	2.35	1996	.15	1981	9.2	3.0	.2	@	.27	.36	.50	.62	.74	.87	1.01	1.17	1.38	1.71	2.02
Apr	2.29	2.35	1.82	1997	6	4.69	1997	.34	1987	11.0	5.7	1.4	.3	.55	.76	1.10	1.40	1.69	2.00	2.35	2.77	3.31	4.17	4.98
May	2.76	2.80	2.60	1995	8	6.00	1995	.97	1979	11.8	6.8	1.7	.3	.98	1.24	1.61	1.93	2.23	2.54	2.88	3.28	3.78	4.56	5.27
Jun	3.07	3.07	2.73	1940	3	6.76	1993	.45	1987	11.3	6.3	1.8	.6	.79	1.08	1.53	1.92	2.31	2.72	3.17	3.71	4.41	5.52	6.56
Jul	2.13	1.78	2.32	1954	16	4.89	1981	.35	1975	10.0	4.9	1.5	.3	.64	.84	1.14	1.40	1.66	1.92	2.22	2.56	3.01	3.70	4.35
Aug	1.65	1.58	2.80	1964	21	4.25	1999	.21	1991	7.7	3.8	1.1	.2	.30	.45	.69	.92	1.14	1.39	1.67	2.01	2.45	3.18	3.86
Sep	1.31	1.10	1.64	1986	24	5.16	1986	.14	1990	6.5	3.1	.7	.2	.19	.30	.48	.67	.86	1.06	1.30	1.60	1.99	2.64	3.26
Oct	1.56	1.04	3.25	1994	6	6.10	1998	.00	1999	6.9	3.6	.8	.2	.14	.32	.57	.80	1.03	1.29	1.58	1.93	2.40	3.15	3.88
Nov	.94	.75	1.87	2000	1	4.35	2000	.24	1981	7.6	3.0	.2	@	.23	.32	.45	.58	.70	.83	.97	1.14	1.36	1.72	2.05
Dec	.73	.70	.80	1916	13	1.83	1996	.01	1994	8.5	2.8	.0	.0	.11	.17	.27	.38	.48	.60	.73	.90	1.12	1.48	1.83
Ann	18.78	18.74	3.25	Oct 1994	6	6.76	Jun 1993	.00+	Oct 1999	106.2	47.6	9.6	2.1	12.77	13.91	15.39	16.52	17.52	18.50	19.51	20.64	22.00	24.00	25.73

+ 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

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

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No. 20

1971-2000

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Station: SUNDANCE, WY

COOP ID: 488705

Climate Division: WY 6

NWS Call Sign:

Elevation: 4,750 Feet

Lat: 44° 24N

Lon: 104° 23W

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	11.7	10.0	8	7	8.0	1983	9	31.8	1994	30	1994	19	23	1994	8.1	4.7	1.1	.4	.0	26.6	22.6	18.3	8.7
Feb	11.0	11.5	7	5	20.0	1998	26	27.8	1998	37	1994	2	28	1994	5.7	3.4	1.3	.4	@	21.0	16.3	12.4	5.6
Mar	12.2	11.2	3	2	14.0	1973	14	28.5	1996	23	1979	3	9	1979	6.8	4.4	1.2	.5	@	11.8	7.7	5.6	2.0
Apr	14.0	12.0	1	1	16.0	1997	5	40.0	1984	25	1984	27	6	1997	5.2	3.7	1.9	1.1	.2	4.4	2.4	1.5	.6
May	2.2	.5	#	0	12.0	1978	7	19.0	1978	10	1984	1	1	1984	.7	.6	.3	.2	@	.5	.2	.1	@
Jun	.1	.0	#	0	2.0	1976	14	2.0	1976	#	1995	9	#	1995	.1	.1	.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	.5	.0	#	0	3.0	1996	25	4.0	1995	2+	2000	23	#+	2000	.3	.3	@	.0	.0	.2	.0	.0	.0
Oct	5.2	2.3	#	#	12.0	1982	9	21.0	1971	8+	1996	26	1	1996	2.3	1.9	.7	.3	.1	2.4	1.4	.6	.0
Nov	10.4	11.0	2	1	10.0	1977	19	20.5	1978	12	1978	30	6	1985	5.9	3.7	1.1	.6	@	11.1	6.1	3.4	.3
Dec	14.0	12.9	5	3	7.0	1980	1	30.0	1996	24	1985	24	16	1985	7.2	4.8	1.5	.5	.0	20.5	14.4	10.8	5.2
Ann	81.3	71.4	N/A	N/A	20.0	Feb 1998	26	40.0	Apr 1984	37	Feb 1994	2	28	Feb 1994	42.3	27.6	9.1	4.0	.3	98.5	71.1	52.7	22.4

+ 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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Climate Division: WY 6

NWS Call Sign:

Elevation: 4,750 Feet

Lat: 44° 24N

Lon: 104° 23W

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	7/02	6/24	6/19	6/14	6/10	6/05	5/31	5/26	5/18
32	6/16	6/10	6/05	6/01	5/28	5/24	5/20	5/16	5/09
28	5/19	5/15	5/12	5/09	5/06	5/04	5/01	4/28	4/23
24	5/09	5/05	5/02	4/29	4/26	4/24	4/21	4/18	4/14
20	5/04	4/29	4/25	4/21	4/18	4/15	4/11	4/07	4/02
16	4/25	4/17	4/12	4/08	4/04	3/31	3/26	3/21	3/14
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	9/02	9/05	9/08	9/10	9/12	9/14	9/16	9/19	9/22
32	9/09	9/12	9/15	9/17	9/19	9/21	9/23	9/25	9/28
28	9/14	9/19	9/23	9/26	9/30	10/03	10/06	10/10	10/15
24	9/20	9/26	9/30	10/04	10/08	10/11	10/15	10/20	10/26
20	9/28	10/03	10/08	10/11	10/15	10/18	10/22	10/26	11/01
16	10/11	10/17	10/22	10/26	10/29	11/02	11/06	11/10	11/17
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	119	111	104	99	94	88	83	77	68
32	135	127	122	117	113	108	104	98	91
28	167	160	154	150	145	141	136	131	124
24	188	179	173	168	164	159	154	148	139
20	204	195	189	184	179	174	169	163	154
16	234	225	218	213	208	203	197	191	182

* 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:

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Elevation: 4,750 Feet Lat: 44° 24N

Lon: 104° 23W

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	1423	1145	1004	689	396	147	42	67	260	601	1041	1351	8166
60	1268	1005	849	539	257	70	12	24	152	446	891	1196	6709
57	1175	921	756	452	184	39	4	12	101	355	801	1103	5903
55	1113	865	694	395	142	25	1	6	73	295	741	1041	5391
50	958	725	541	263	64	6	0	1	25	165	602	886	4236
32	442	282	116	16	0	0	0	0	0	5	194	381	1436

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	41	61	134	317	630	911	1153	1114	757	427	143	53	5741
55	0	0	0	6	60	246	441	407	140	4	0	0	1304
57	0	0	0	3	39	200	382	350	108	2	0	0	1084
60	0	0	0	0	19	141	297	270	70	0	0	0	797
65	0	0	0	0	4	67	172	157	28	0	0	0	428
70	0	0	0	0	0	24	85	77	9	0	0	0	195

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	7	51	167	396	668	894	868	546	240	44	3	0	7	58	225	621	1289	2183	3051	3597	3837	3881	3884
45	0	0	16	86	260	518	739	713	407	137	15	0	0	0	16	102	362	880	1619	2332	2739	2876	2891	2891
50	0	0	0	38	149	375	584	558	282	62	2	0	0	0	0	38	187	562	1146	1704	1986	2048	2050	2050
55	0	0	0	12	70	243	431	403	169	19	0	0	0	0	0	12	82	325	756	1159	1328	1347	1347	1347
60	0	0	0	1	24	133	282	261	85	4	0	0	0	0	0	1	25	158	440	701	786	790	790	790
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	8	46	127	249	415	574	560	355	172	33	1	0	8	54	181	430	845	1419	1979	2334	2506	2539	2540

(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.
Complete documentation for the 1971-2000 Normals is available on the internet from:
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 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.

- | | |
|---|---|
| <ol style="list-style-type: none">a. Temperature/ Precipitation Tables<ol style="list-style-type: none">1. 1971-2000 Monthly Normals2. Cooperative Summary of the Day3. National Weather Service station records4. 1971-2000 serially complete daily datab. Degree Day Table<ol style="list-style-type: none">1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data | <ol style="list-style-type: none">c. Snow Tables<ol style="list-style-type: none">1. Snow Climatology2. Cooperative Summary of the Dayd. Freeze Data Table
1971-2000 serially complete daily data |
|---|---|

References

U.S. Climate Normals 1971-2000, www.ncdc.noaa.gov/normal.html
U.S. Climate Normals 1971-2000-Products Clim20, www.ncdc.noaa.gov/oa/climate/normal/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