

Climatology of the United States

No. 20

National Climatic Data Center
Federal Building
151 Patton Avenue
Asheville, North Carolina 28801
www.ncdc.noaa.gov

Station: DULL CENTER 1 SE, WY

1971-2000

COOP ID: 482725

Climate Division: WY 7

NWS Call Sign:

Elevation: 4,415 Feet Lat: 43° 25N

Lon: 104° 58W

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	34.8	10.8	22.8	68	1981	23	32.0	1992	-47	1963	13	6.8	1979	1309	0	.0	.0	3.6	10.8	29.4	7.5
Feb	40.5	15.9	28.2	71	1982	21	37.2	1991	-35	1996	2	13.2	1989	1031	0	.0	.0	7.9	7.1	25.8	4.0
Mar	49.4	22.8	36.1	77	1978	30	42.7	1986	-28	1960	3	30.1	1996	896	0	.0	.0	16.5	3.3	26.5	1.1
Apr	58.7	30.9	44.8	87+	1989	22	50.8	1987	-9	1966	20	37.6	1997	607	0	.0	.0	22.9	.6	17.1	@
May	69.0	40.4	54.7	96	1969	27	61.0	1994	12	1953	12	50.1	1983	330	9	.0	.3	29.6	.0	4.4	.0
Jun	80.8	48.8	64.8	106	1988	24	74.7	1988	28	1951	2	58.5	1998	115	109	.6	6.1	29.9	.0	.2	.0
Jul	89.3	54.6	72.0	109	1954	12	75.6	1983	29	1971	22	66.0+	1993	18	234	2.5	16.4	31.0	.0	@	.0
Aug	88.4	53.5	71.0	107	1979	5	77.2	1983	33	1964	25	66.4	1974	25	209	1.1	15.3	31.0	.0	.0	.0
Sep	77.0	42.9	60.0	103	1978	6	66.5	1998	10	1961	30	55.8	1974	195	44	.1	4.1	29.3	.0	3.3	.0
Oct	63.1	32.1	47.6	89+	1963	4	50.9	1979	-8	1991	31	44.0	1976	539	0	.0	.0	26.2	.5	14.1	.1
Nov	45.3	20.9	33.1	78	2001	4	44.4	1999	-24	1955	16	15.7	1985	957	0	.0	.0	11.8	5.3	25.5	1.6
Dec	36.4	12.2	24.3	69	1976	17	33.1	1980	-42	1990	22	6.2	1983	1262	0	.0	.0	5.1	10.6	29.2	5.4
Ann	61.1	32.2	46.6	109	Jul 1954	12	77.2	Aug 1983	-47	Jan 1963	13	6.2	Dec 1983	7284	605	4.3	42.2	244.8	38.2	175.5	19.7

+ 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: 1948-2001

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

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Station: DULL CENTER 1 SE, WY

COOP ID: 482725

Climate Division: WY 7

NWS Call Sign:

Elevation: 4,415 Feet Lat: 43°25N

Lon: 104°58W

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	.24	.20	.75	1953	15	.79	1978	.00+	1989	3.5	.7	.0	.0	.00	.03	.07	.11	.15	.19	.24	.30	.38	.51	.64
Feb	.42	.29	1.25	1953	9	1.33	1998	.00+	1983	3.8	1.5	.1	@	.00	.03	.09	.15	.22	.30	.40	.52	.68	.96	1.23
Mar	.74	.68	1.58	1990	6	2.08	1998	.00	1974	5.1	2.3	.2	.1	.10	.19	.31	.42	.52	.64	.76	.91	1.11	1.42	1.71
Apr	1.67	1.39	2.22	2000	19	3.99	1971	.16	1987	7.7	4.2	1.0	.2	.33	.48	.72	.95	1.17	1.42	1.70	2.03	2.48	3.19	3.87
May	2.33	2.00	3.20	1952	22	6.93	1978	.48	1973	9.4	5.2	1.4	.3	.52	.74	1.08	1.39	1.70	2.02	2.39	2.83	3.41	4.33	5.19
Jun	2.10	1.37	3.24	1999	10	7.92	1999	.50	1988	8.4	4.8	1.1	.3	.37	.55	.86	1.14	1.44	1.76	2.12	2.56	3.15	4.09	5.00
Jul	1.68	1.41	2.22	1997	28	4.94	1997	.31	1989	6.7	4.0	.9	.4	.38	.53	.78	1.00	1.22	1.46	1.72	2.04	2.46	3.12	3.74
Aug	1.28	1.19	1.53	1980	15	3.06	1972	.00	1975	5.0	3.0	.8	.2	.11	.26	.47	.65	.85	1.05	1.29	1.58	1.97	2.60	3.20
Sep	1.04	.77	1.67	1963	1	3.59	1973	.13	1991	5.0	2.9	.6	.1	.09	.16	.30	.45	.60	.78	1.00	1.26	1.63	2.24	2.85
Oct	1.00	.77	1.73	1993	8	4.38	1998	.10	1988	4.5	2.7	.6	.1	.11	.18	.32	.46	.61	.78	.98	1.22	1.56	2.12	2.66
Nov	.58	.59	.85	2000	1	2.00	1983	.01	1981	4.1	1.9	.2	.0	.07	.12	.20	.28	.36	.46	.57	.71	.89	1.20	1.49
Dec	.36	.31	.58	1992	12	1.55	1992	.00+	1986	3.9	1.4	@	.0	.00	.04	.11	.16	.22	.29	.36	.45	.57	.77	.96
Ann	13.44	13.39	3.24	Jun 1999	10	7.92	Jun 1999	.00+	Jan 1989	67.1	34.6	6.9	1.7	8.17	9.13	10.39	11.37	12.26	13.13	14.04	15.05	16.31	18.15	19.77

+ 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

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Station: DULL CENTER 1 SE, WY

COOP ID: 482725

Climate Division: WY 7

NWS Call Sign:

Elevation: 4,415 Feet

Lat: 43°25N

Lon: 104°58W

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	5.6	5.2	2	1	7.0	1974	21	13.5	1972	14	1984	2	12	1979	4.7	2.3	.3	.1	.0	16.0	10.2	5.5	1.1
Feb	6.9	6.3	2	1	8.0	1998	25	16.0+	1987	13	1979	5	8	1979	3.5	2.3	.8	.3	.0	9.3	5.7	3.1	.5
Mar	8.9	7.2	1	1	13.3	1990	6	26.8	1998	14	1990	6	6	1985	4.0	3.0	1.1	.5	.1	6.2	2.9	1.3	.2
Apr	8.7	8.4	#	#	9.0	1973	30	31.0	1984	18	1984	27	3	1997	2.7	2.2	1.3	.5	.0	2.7	1.3	.7	.1
May	1.2	.0	#	0	12.0	1978	7	12.0	1978	4	1976	30	#+	1991	.3	.3	.2	.1	@	.1	@	.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	.6	.0	#	0	7.0	2000	23	9.0	2000	6	2000	23	#+	2000	.3	.2	.1	@	.0	.1	@	@	.0
Oct	3.8	2.0	#	#	14.0	1993	8	15.4	1993	13	1993	8	1	1995	1.3	1.1	.4	.3	@	1.5	.7	.3	.1
Nov	6.4	4.4	1	1	11.0	1977	19	29.5	1983	14	1985	30	5	1985	3.4	2.1	1.0	.3	.1	6.8	4.5	2.8	.7
Dec	7.9	7.0	2	1	10.5	1978	25	27.7	1978	19	1983	27	15	1983	4.8	2.3	1.0	.1	@	12.8	8.0	4.4	1.0
Ann	50.0	40.5	N/A	N/A	14.0	Oct 1993	8	31.0	Apr 1984	19	Dec 1983	27	15	Dec 1983	25.0	15.8	6.2	2.2	.2	55.5	33.3	18.1	3.7

+ 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:

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No. 20 1971-2000

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COOP ID: 482725

Climate Division: WY 7

NWS Call Sign:

Elevation: 4,415 Feet

Lat: 43° 25N

Lon: 104° 58W

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	6/21	6/13	6/08	6/04	5/30	5/26	5/21	5/16	5/09
32	6/13	6/05	5/31	5/26	5/21	5/17	5/12	5/06	4/28
28	5/15	5/11	5/08	5/06	5/04	5/02	4/30	4/27	4/24
24	5/02	4/28	4/25	4/22	4/20	4/17	4/15	4/12	4/07
20	4/27	4/21	4/17	4/14	4/11	4/08	4/05	4/01	3/26
16	4/23	4/16	4/12	4/08	4/05	4/01	3/28	3/24	3/18
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	9/07	9/10	9/12	9/14	9/16	9/18	9/20	9/22	9/25
32	9/08	9/12	9/15	9/18	9/20	9/22	9/25	9/27	10/01
28	9/16	9/20	9/23	9/26	9/29	10/01	10/04	10/07	10/11
24	9/21	9/27	10/01	10/05	10/08	10/11	10/15	10/19	10/25
20	9/29	10/05	10/09	10/13	10/16	10/19	10/23	10/27	11/02
16	10/12	10/17	10/21	10/24	10/28	10/31	11/03	11/07	11/12
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	133	124	118	113	108	103	98	92	83
32	149	140	133	127	121	115	109	103	93
28	163	158	154	150	147	143	140	136	130
24	190	184	179	174	170	167	162	157	151
20	211	203	197	192	187	183	177	172	163
16	231	222	216	210	205	200	195	188	180

* 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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COOP ID: 482725

Climate Division: WY 7

NWS Call Sign:

Elevation: 4,415 Feet Lat: 43° 25N

Lon: 104° 58W

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	1309	1031	896	607	330	115	18	25	195	539	957	1262	7284
60	1154	891	741	461	201	52	3	5	101	385	807	1107	5908
57	1061	807	648	376	138	28	1	2	60	295	720	1014	5150
55	999	751	586	322	103	18	0	1	40	238	665	952	4675
50	848	621	435	203	41	5	0	0	10	120	526	803	3612
32	367	224	59	8	0	0	0	0	0	2	157	333	1150

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	81	116	185	391	702	984	1239	1207	839	486	190	94	6514
55	0	0	0	15	92	312	526	495	189	9	8	0	1646
57	0	0	0	9	65	263	465	434	149	4	3	0	1392
60	0	0	0	4	35	196	375	344	100	1	0	0	1055
65	0	0	0	0	9	109	234	209	44	0	0	0	605
70	0	0	0	0	2	49	123	104	14	0	0	0	292

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	8	25	79	207	470	757	1006	975	618	288	63	16	8	33	112	319	789	1546	2552	3527	4145	4433	4496	4512
45	0	4	32	116	328	609	851	820	472	171	24	4	0	4	36	152	480	1089	1940	2760	3232	3403	3427	3431
50	0	0	8	51	195	460	696	665	338	82	5	0	0	0	8	59	254	714	1410	2075	2413	2495	2500	2500
55	0	0	0	17	101	319	542	510	215	29	0	0	0	0	0	17	118	437	979	1489	1704	1733	1733	1733
60	0	0	0	3	39	191	388	357	117	6	0	0	0	0	0	3	42	233	621	978	1095	1101	1101	1101
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	5	30	83	170	309	475	623	605	412	232	56	12	5	35	118	288	597	1072	1695	2300	2712	2944	3000	3012

(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