

Climatography of the United States No. 20

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

Station: SCOTTSBLUFF AP, NE

1971-2000

COOP ID: 257665

Climate Division: NE 1

NWS Call Sign: BFF

Elevation: 3,943 Feet Lat: 41° 52N

Lon: 103° 36W

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	38.0	11.0	24.5	74	1982	26	31.9	1986	-32	1963	19	8.3	1979	1241	0	.0	.0	7.2	9.2	30.0	5.6
Feb	44.3	15.8	30.0	77	1962	11	37.8	1999	-28	1962	28	17.4	1989	969	0	.0	.0	11.3	5.9	27.1	3.3
Mar	51.7	23.0	37.3	83	1978	30	43.4	1986	-21	1989	5	32.2	1975	843	0	.0	.0	18.2	2.7	26.6	.7
Apr	61.0	31.4	46.2	93	1992	30	54.7	1981	-8	1975	2	39.6	1997	549	1	.0	.1	24.2	.6	14.7	.1
May	71.1	42.4	56.8	96	2000	28	62.6	1994	15	1983	12	50.3	1983	259	19	.0	1.0	29.8	.0	1.9	.0
Jun	82.2	52.1	67.2	106	1990	27	71.8	1988	30	1969	14	61.9	1982	53	135	.8	7.8	29.9	.0	.0	.0
Jul	88.7	57.4	73.0	109+	1989	7	76.6	1980	40	1959	1	67.9	1992	9	273	3.0	15.9	31.0	.0	.0	.0
Aug	86.8	54.9	70.9	104+	1988	15	75.8	2000	37	1964	30	66.2	1992	12	211	.8	13.6	31.0	.0	.0	.0
Sep	77.3	43.7	60.5	102+	1998	5	68.1	1998	19+	1985	30	54.6	1974	170	51	.2	4.9	29.2	@	1.6	.0
Oct	64.4	31.3	47.8	92	1967	3	50.3	1979	-6	1991	31	44.4	1976	517	0	.0	.1	27.2	.4	12.8	.1
Nov	48.2	19.7	34.0	80	1989	12	43.1	1999	-12	1952	28	20.6	1985	917	0	.0	.0	14.5	3.9	26.8	1.1
Dec	39.8	11.6	25.7	77	1980	27	34.7	1980	-42	1989	22	11.2	1983	1203	0	.0	.0	8.2	8.2	30.2	4.4
Ann	62.8	32.9	47.8	109+	Jul 1989	7	76.6	Jul 1980	-42	Dec 1989	22	8.3	Jan 1979	6742	690	4.8	43.4	261.7	30.9	171.7	15.3

+ 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

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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Elevation: 3,943 Feet Lat: 41° 52N

Lon: 103° 36W

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	.54	.50	.71	1995	16	1.26	1978	.00	1989	6.2	1.7	.1	.0	.08	.15	.24	.31	.39	.47	.56	.66	.80	1.02	1.22
Feb	.58	.44	.86	1987	26	1.93	1986	.00	1996	5.4	1.8	.2	.0	.02	.05	.13	.21	.31	.41	.54	.71	.93	1.32	1.71
Mar	1.16	1.08	1.36	1990	6	2.64	1990	.18	1997	7.4	3.5	.4	.1	.29	.40	.57	.72	.86	1.02	1.20	1.40	1.67	2.10	2.50
Apr	1.79	1.77	1.78	2001	2	3.89+	1997	.34	1992	9.3	4.5	.9	.2	.40	.57	.83	1.06	1.30	1.55	1.84	2.17	2.62	3.33	4.00
May	2.70	2.16	2.30	1988	19	7.25	1987	.79	1974	11.2	6.3	1.7	.5	.63	.88	1.28	1.63	1.98	2.36	2.77	3.27	3.93	4.97	5.94
Jun	2.65	2.44	3.18	1953	7	6.63	1982	.68	2000	10.2	5.6	1.6	.5	.64	.89	1.28	1.62	1.97	2.33	2.73	3.21	3.84	4.84	5.78
Jul	2.13	1.76	2.53	1948	14	4.82	1978	.25	1976	9.1	5.0	1.1	.4	.36	.55	.86	1.15	1.45	1.78	2.15	2.60	3.20	4.17	5.10
Aug	1.19	1.16	1.77	1987	3	3.42	1987	.08	1995	7.3	2.9	.6	.1	.13	.22	.39	.55	.73	.93	1.16	1.45	1.85	2.50	3.14
Sep	1.22	.94	2.56	1951	2	4.22	1973	.09	1978	7.1	3.3	.6	.1	.12	.20	.37	.54	.72	.93	1.18	1.49	1.91	2.62	3.31
Oct	1.01	.78	1.27	1997	24	2.76+	1998	.06	1999	5.6	2.5	.5	.1	.11	.18	.32	.46	.61	.78	.98	1.23	1.57	2.14	2.69
Nov	.80	.68	1.43	1993	12	2.15	1993	.07	1989	5.3	2.5	.3	@	.13	.20	.32	.43	.54	.67	.81	.98	1.21	1.58	1.94
Dec	.56	.53	.90	1975	31	1.54	1978	.02	1991	5.7	1.9	.1	.0	.07	.11	.19	.27	.35	.45	.55	.69	.87	1.16	1.45
Ann	16.33	16.26	3.18	Jun 1953	7	7.25	May 1987	.00+	Feb 1996	89.8	41.5	8.1	2.0	10.19	11.32	12.80	13.94	14.98	15.99	17.04	18.22	19.67	21.80	23.67

+ 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

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Climate Division: NE 1

NWS Call Sign: BFF

Elevation: 3,943 Feet

Lat: 41°52N

Lon: 103°36W

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	6.9	7.0	1	1	9.1	1995	16	17.1	1980	15	1976	2	5+	1988	6.0	2.0	.6	.3	.0	12.9	5.7	3.1	.5
Feb	6.2	3.8	1	1	9.8	1987	26	23.4	1987	15	1987	28	5	1993	4.6	2.1	.6	.1	.0	7.7	3.7	1.7	.4
Mar	8.9	7.2	1	1	10.0	1974	11	23.5	1980	14	1987	1	2	1987	5.6	2.9	1.0	.2	@	5.6	2.9	1.1	.1
Apr	5.0	2.9	#	1	11.2	1997	5	22.2	1997	10	1975	2	1+	1997	3.4	1.6	.6	.1	@	1.6	.6	.4	@
May	.6	.0	#	0	3.0	1978	6	6.4	1979	2+	1983	12	#	2000	.4	.2	@	.0	.0	.1	.0	.0	.0
Jun	.0	.0	#	0	.0	0	0	.0	0	#	1976	14	#	1983	.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	4.5	1985	28	5.7	2000	4	1985	29	#	1985	.4	.2	.1	.0	.0	.2	@	.0	.0
Oct	2.3	1.4	#	0	6.4	1990	7	8.0	1997	6	1990	8	#	1997	1.4	.7	.3	.1	.0	.6	.4	.1	.0
Nov	6.6	4.9	1	0	7.6	1979	20	18.5	1983	12+	1979	23	3+	1985	4.0	2.1	.8	.2	.0	5.5	2.7	1.4	.2
Dec	7.1	5.8	1	1	10.9	1975	31	18.1	1985	12+	1987	28	6	1985	5.3	2.2	.7	.3	@	10.8	4.9	2.2	.3
Ann	44.2	33.0	N/A	N/A	11.2	Apr 1997	5	23.5	Mar 1980	15+	Feb 1987	28	6	Dec 1985	31.1	14.0	4.7	1.3	@	45.0	20.9	10.0	1.5

+ 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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NWS Call Sign: BFF

Elevation: 3,943 Feet

Lat: 41° 52N

Lon: 103° 36W

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	5/31	5/26	5/22	5/19	5/17	5/14	5/11	5/07	5/02
32	5/19	5/14	5/10	5/06	5/03	4/30	4/27	4/23	4/18
28	5/12	5/07	5/03	4/30	4/27	4/24	4/21	4/17	4/12
24	5/05	4/29	4/24	4/21	4/17	4/13	4/10	4/05	3/30
20	4/25	4/18	4/14	4/10	4/06	4/02	3/30	3/25	3/18
16	4/20	4/12	4/05	3/31	3/26	3/21	3/15	3/09	2/28
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	9/11	9/14	9/17	9/19	9/21	9/23	9/25	9/28	10/01
32	9/14	9/19	9/22	9/25	9/27	9/30	10/03	10/06	10/10
28	9/23	9/28	10/02	10/05	10/08	10/10	10/13	10/17	10/22
24	10/01	10/06	10/10	10/14	10/17	10/20	10/23	10/27	11/01
20	10/08	10/13	10/17	10/20	10/23	10/26	10/30	11/03	11/08
16	10/21	10/25	10/29	11/01	11/03	11/06	11/09	11/12	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	144	138	134	130	127	123	120	115	109
32	170	162	156	151	146	141	136	130	122
28	185	177	172	167	163	159	154	149	141
24	207	198	192	187	182	177	172	166	157
20	228	218	211	205	200	194	188	181	171
16	255	244	235	228	222	215	208	200	189

* 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: 257665

Climate Division: NE 1 NWS Call Sign: BFF Elevation: 3,943 Feet Lat: 41°52N Lon: 103°36W

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	1241	969	843	549	259	53	9	12	170	517	917	1203	6742
60	1101	839	703	420	156	19	0	5	100	378	781	1064	5566
57	1008	755	610	338	103	7	0	2	61	288	691	971	4834
55	946	699	548	286	75	4	0	1	41	230	631	909	4370
50	794	570	396	175	28	0	0	0	12	108	493	757	3333
32	317	186	37	5	0	0	0	0	0	1	120	287	953

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	66	121	245	457	787	1074	1298	1241	897	543	187	78	6994
55	0	0	2	31	142	388	585	529	248	37	1	0	1963
57	0	0	1	20	106	332	523	467	203	22	0	0	1674
60	0	0	0	10	63	252	431	375	142	9	0	0	1282
65	0	0	0	1	19	135	273	211	51	0	0	0	690
70	0	0	0	0	3	56	147	101	21	0	0	0	328

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	9	36	96	255	552	843	1059	1001	668	322	72	23	9	45	141	396	948	1791	2850	3851	4519	4841	4913	4936
45	1	9	40	151	399	693	904	846	519	198	30	3	1	10	50	201	600	1293	2197	3043	3562	3760	3790	3793
50	0	0	11	78	263	544	749	691	383	102	7	0	0	0	11	89	352	896	1645	2336	2719	2821	2828	2828
55	0	0	0	32	151	398	594	536	258	38	0	0	0	0	0	32	183	581	1175	1711	1969	2007	2007	2007
60	0	0	0	12	68	258	439	384	148	8	0	0	0	0	0	12	80	338	777	1161	1309	1317	1317	1317
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	25	57	109	200	347	527	670	637	432	258	81	35	25	82	191	391	738	1265	1935	2572	3004	3262	3343	3378

(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