

Climatography of the United States

No. 20

1971-2000

Station: BEDFORD, IA

COOP ID: 130576

Climate Division: IA 7

NWS Call Sign:

Elevation: 1,135 Feet Lat: 40°40N

Lon: 94°44W

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	30.6	10.4	20.5	68	1989	31	31.9	1989	-32	1974	12	7.0	1979	1380	0	.0	.0	2.6	14.8	29.8	6.5
Feb	37.1	15.5	26.3	76	1972	28	36.5	1998	-34	1996	3	12.9	1979	1084	0	.0	.0	6.4	9.6	24.9	3.8
Mar	49.0	26.5	37.8	89	1986	29	43.7	1986	-24	1998	12	29.0	1978	845	0	.0	.0	16.6	2.5	19.0	.5
Apr	61.0	37.9	49.5	94	1956	27	57.1	1981	5	1975	3	43.0	1983	469	3	.0	.1	26.3	.1	7.1	.0
May	72.1	50.3	61.2	97	1956	12	67.2+	1988	28+	1966	2	56.5	1997	179	60	.0	.2	31.0	.0	.4	.0
Jun	81.5	59.6	70.6	102	1956	19	78.2	1988	38	1969	3	66.2	1982	25	192	.2	4.7	30.0	.0	.0	.0
Jul	85.7	64.7	75.2	107+	1954	13	80.9	1980	40+	1971	30	70.9	1971	2	318	.6	10.3	31.0	.0	.0	.0
Aug	84.0	62.4	73.2	106	1954	4	80.8	1983	38	1964	13	67.8	1992	17	272	.3	7.7	31.0	.0	.0	.0
Sep	76.4	52.6	64.5	102	1953	28	70.5	1998	26+	1965	24	58.7	1993	101	86	.0	2.3	29.9	.0	.4	.0
Oct	64.7	40.4	52.6	94	1997	4	57.4	1971	11	1972	19	46.4	1987	390	4	.0	.1	28.7	@	5.6	.0
Nov	47.6	27.2	37.4	81	1999	14	46.2	1999	-11	1964	30	29.9	1991	828	0	.0	.0	14.9	2.8	18.5	.3
Dec	34.4	15.7	25.1	69	1964	23	30.7+	1994	-26+	1989	22	8.1	1983	1239	0	.0	.0	4.1	10.9	28.7	3.7
Ann	60.3	38.6	49.5	107+	Jul 1954	13	80.9	Jul 1980	-34	Feb 1996	3	7.0	Jan 1979	6559	935	1.1	25.4	252.5	40.7	134.4	14.8

+ 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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Climatology 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: BEDFORD, IA

COOP ID: 130576

Climate Division: IA 7

NWS Call Sign:

Elevation: 1,135 Feet Lat: 40°40N

Lon: 94°44W

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	.93	.77	2.04	1960	12	2.93	1973	.01	1986	4.9	2.7	.5	@	.05	.11	.22	.35	.49	.66	.86	1.12	1.49	2.11	2.73
Feb	1.07	.95	1.95	1955	18	2.52	1973	.11	1979	5.3	3.1	.5	.1	.19	.29	.44	.59	.73	.89	1.08	1.30	1.59	2.07	2.52
Mar	2.30	1.86	1.76	1973	31	5.57	1973	.12	1994	7.3	4.8	1.6	.5	.32	.51	.84	1.16	1.49	1.86	2.29	2.81	3.51	4.65	5.75
Apr	3.21	2.67	3.61	1969	26	7.74	1976	.81	1989	9.3	6.5	2.2	.6	.96	1.27	1.72	2.12	2.50	2.90	3.34	3.86	4.52	5.57	6.54
May	4.76	5.01	3.07	1978	7	10.68	1982	1.36	1994	10.0	7.8	3.5	1.4	1.67	2.12	2.77	3.32	3.85	4.39	4.97	5.66	6.53	7.89	9.13
Jun	4.57	4.14	5.31	1959	30	10.03	1994	.21	1988	8.9	6.9	2.9	1.5	1.00	1.43	2.10	2.70	3.31	3.95	4.68	5.55	6.69	8.52	10.24
Jul	5.15	4.24	5.73	1979	25	17.05	1993	.26	1983	8.6	6.6	3.2	2.0	.68	1.09	1.82	2.54	3.29	4.13	5.10	6.29	7.90	10.54	13.09
Aug	4.03	3.47	5.00	1977	9	13.95	1977	1.05	1983	7.7	5.5	2.5	1.3	.92	1.30	1.89	2.42	2.95	3.51	4.14	4.89	5.88	7.45	8.93
Sep	3.87	3.34	3.92	1989	9	8.60	1986	.48	1991	6.9	5.1	2.6	1.5	.78	1.13	1.70	2.22	2.75	3.31	3.95	4.71	5.73	7.35	8.89
Oct	3.01	2.71	5.52	1973	11	10.98	1977	.02	1975	6.5	4.9	1.9	.7	.29	.51	.92	1.34	1.79	2.31	2.91	3.67	4.71	6.43	8.12
Nov	2.32	2.34	5.07	1952	17	5.36	1992	.00	1989	6.7	4.6	1.6	.5	.25	.53	.92	1.25	1.59	1.96	2.37	2.87	3.52	4.58	5.59
Dec	1.13	.97	1.70	1968	18	2.77	1973	.14	1976	5.3	3.4	.5	.1	.21	.31	.48	.63	.79	.95	1.14	1.37	1.68	2.17	2.64
Ann	36.35	35.19	5.73	Jul 1979	25	17.05	Jul 1993	.00	Nov 1989	87.4	61.9	23.5	10.2	23.64	26.01	29.10	31.48	33.61	35.69	37.85	40.26	43.21	47.52	51.29

+ 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:
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Station: BEDFORD, IA

COOP ID: 130576

Climate Division: IA 7

NWS Call Sign:

Elevation: 1,135 Feet

Lat: 40° 40N

Lon: 94° 44W

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	7.1	6.5	1	#	15.0	1971	4	17.0	1971	11	1974	12	4	1991	2.6	2.2	.9	.2	@	-9.9	-9.9	-9.9	-9.9
Feb	5.9	5.5	1	1	7.0	1981	1	13.1	1981	9+	1999	24	4+	1997	2.2	2.0	.6	.4	.0	7.2	4.8	2.2	.0
Mar	3.9	2.0	#	0	8.0	1978	2	18.6	1984	9	1998	12	3	1998	1.6	1.3	.5	.2	.0	2.0	1.4	.7	.0
Apr	1.0	.0	#	0	8.0	1997	11	8.0	1997	11	1997	13	1	1997	.5	.5	.1	.1	.0	.1	.0	.0	.0
May	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.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	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	.2	.0	#	0	5.0	1980	27	5.0	1980	1	1987	10	#+	1996	.1	.1	@	@	.0	.1	.0	.0	.0
Nov	2.0	1.0	#	0	7.0	1987	29	7.0	1987	7	1987	29	2	1991	.8	.7	.3	.1	.0	.5	.4	.1	.0
Dec	4.8	4.0	1	#	6.0	1981	17	17.0	1983	13	2000	29	9	2000	2.3	2.2	.6	.1	.0	3.0	.7	.3	.0
Ann	24.9	19.0	N/A	N/A	15.0	Jan 1971	4	18.6	Mar 1984	13	Dec 2000	29	9	Dec 2000	10.1	9.0	3.0	1.1	@	-9.9	-9.9	-9.9	-9.9

+ 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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Elevation: 1,135 Feet

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Lon: 94° 44W

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	5/18	5/13	5/09	5/06	5/03	4/30	4/27	4/23	4/18
32	5/09	5/04	5/01	4/28	4/25	4/22	4/19	4/16	4/11
28	4/24	4/20	4/17	4/14	4/12	4/09	4/07	4/03	3/30
24	4/14	4/10	4/07	4/04	4/02	3/30	3/28	3/25	3/20
20	4/11	4/05	4/01	3/28	3/25	3/22	3/18	3/14	3/08
16	4/03	3/27	3/23	3/19	3/15	3/11	3/07	3/02	2/24
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	9/15	9/19	9/22	9/25	9/27	9/30	10/02	10/05	10/10
32	9/23	9/28	10/01	10/04	10/06	10/09	10/12	10/15	10/20
28	9/30	10/06	10/10	10/13	10/16	10/19	10/23	10/27	11/01
24	10/13	10/18	10/22	10/26	10/29	11/02	11/05	11/09	11/15
20	10/22	10/29	11/02	11/06	11/09	11/13	11/17	11/21	11/27
16	11/02	11/08	11/13	11/17	11/20	11/24	11/28	12/02	12/08
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	166	159	154	150	146	142	138	133	126
32	180	175	171	167	164	160	157	153	147
28	206	199	195	191	187	183	179	174	168
24	232	224	219	214	210	206	201	195	188
20	256	247	240	234	229	223	218	211	201
16	279	269	262	255	250	244	237	230	220

* 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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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	1380	1084	845	469	179	25	2	17	101	390	828	1239	6559
60	1225	944	690	330	93	5	0	3	40	253	678	1084	5345
57	1132	860	600	254	57	2	0	0	19	183	589	991	4687
55	1070	809	544	209	39	1	0	0	10	142	531	929	4284
50	917	679	403	115	12	0	0	0	1	67	394	781	3369
32	426	280	77	2	0	0	0	0	0	0	69	315	1169

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	70	120	255	525	904	1157	1339	1278	975	637	231	99	7590
55	0	5	9	42	230	467	626	565	295	66	3	0	2308
57	0	0	3	27	186	408	564	503	243	45	1	0	1980
60	0	0	0	13	129	322	471	413	174	22	0	0	1544
65	0	0	0	3	60	192	318	272	86	4	0	0	935
70	0	0	0	0	20	93	179	155	33	0	0	0	480

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	3	33	149	375	693	953	1122	1055	782	440	119	15	3	36	185	560	1253	2206	3328	4383	5165	5605	5724	5739
45	0	12	83	251	538	803	967	900	632	303	59	6	0	12	95	346	884	1687	2654	3554	4186	4489	4548	4554
50	0	1	43	148	390	653	812	745	485	187	24	0	0	1	44	192	582	1235	2047	2792	3277	3464	3488	3488
55	0	0	13	80	254	504	657	590	343	97	5	0	0	0	13	93	347	851	1508	2098	2441	2538	2543	2543
60	0	0	2	38	137	355	502	436	220	39	0	0	0	0	2	40	177	532	1034	1470	1690	1729	1729	1729
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	2	26	100	235	426	638	767	717	501	272	70	8	2	28	128	363	789	1427	2194	2911	3412	3684	3754	3762

(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.

- 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
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