

Climatology of the United States

No. 20

1971-2000

Station: BENTON 2 N, IL

COOP ID: 110608

Climate Division: IL 9

NWS Call Sign:

Elevation: 450 Feet

Lat: 38°02N

Lon: 88°55W

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	39.0	21.3	30.2	71	1990	17	40.4	1990	-22	1977	17	13.3	1977	1080	0	.0	.0	6.0	9.0	26.1	1.8
Feb	45.1	25.8	35.5	76+	1996	28	43.8	1976	-9	1996	3	21.4	1978	827	0	.0	.0	9.8	5.4	20.7	1.0
Mar	55.7	35.5	45.6	83+	1990	11	52.3	1973	5	1978	4	38.0	1996	601	0	.0	.0	20.8	.7	13.1	.0
Apr	66.9	44.8	55.9	91+	1989	28	61.8	1981	20	1990	7	50.2	1983	289	14	.0	.1	28.0	.0	3.1	.0
May	76.4	54.3	65.4	93+	2001	17	71.9	1987	33	1978	2	61.0	1981	108	118	.0	.7	31.0	.0	@	.0
Jun	84.9	63.3	74.1	103	1988	26	77.5	1971	43	1992	22	69.6	1974	4	278	.1	7.8	30.0	.0	.0	.0
Jul	89.8	67.9	78.9	103	1999	31	82.5	1980	54+	2001	15	75.2	1996	0	429	.5	15.0	31.0	.0	.0	.0
Aug	88.5	65.3	76.9	103	1991	4	81.9	1983	48	1989	8	72.5	1992	1	371	.7	11.8	31.0	.0	.0	.0
Sep	81.1	57.6	69.4	100	1995	1	73.8	1998	34+	1995	25	64.3	1974	41	172	@	4.6	30.0	.0	.0	.0
Oct	69.4	45.3	57.4	91	1989	14	64.6	1971	21	1976	29	50.9	1976	266	29	.0	@	30.3	.0	3.6	.0
Nov	56.0	36.7	46.4	82	2000	2	52.1	1999	8	1976	30	37.3	1976	561	1	.0	.0	20.1	.3	11.5	.0
Dec	43.4	26.3	34.9	72+	1998	7	42.8	1982	-15	1989	22	21.4	1989	934	0	.0	.0	8.6	4.8	23.4	.8
Ann	66.4	45.3	55.9	103+	Jul 1999	31	82.5	Jul 1980	-22	Jan 1977	17	13.3	Jan 1977	4712	1412	1.3	40.0	276.6	20.2	101.5	3.6

+ 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

009-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: BENTON 2 N, IL

COOP ID: 110608

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NWS Call Sign:

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Lat: 38°02N

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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	2.90	2.58	4.00	1998	9	7.07	1982	.33	1981	7.5	4.9	1.8	.6	.60	.87	1.29	1.68	2.07	2.49	2.96	3.53	4.28	5.48	6.61
Feb	2.87	2.70	2.35	1989	14	6.59	1989	.73	1996	7.7	5.2	2.2	.8	.88	1.15	1.56	1.91	2.25	2.60	2.99	3.44	4.03	4.94	5.79
Mar	4.18	4.04	3.37	1977	28	7.90	1989	1.35	1971	9.7	7.2	3.0	1.1	1.61	2.00	2.55	3.01	3.45	3.89	4.38	4.93	5.64	6.73	7.73
Apr	4.50	3.36	8.77	1996	29	13.94	1996	1.65+	1992	9.9	7.2	2.7	1.4	1.14	1.56	2.22	2.80	3.37	3.97	4.64	5.44	6.48	8.12	9.66
May	4.59	4.06	4.37	1995	18	12.26	1995	.91	1972	9.3	7.3	3.4	1.3	1.23	1.67	2.33	2.91	3.48	4.08	4.74	5.53	6.56	8.16	9.67
Jun	4.06	3.58	5.95	2000	19	9.68	1997	.70	1986	7.9	5.9	2.6	.9	.92	1.30	1.89	2.42	2.96	3.53	4.16	4.92	5.92	7.52	9.02
Jul	3.19	2.32	4.25	1988	20	7.35	1986	.56	1991	6.4	4.7	2.1	1.1	.68	.97	1.44	1.86	2.29	2.75	3.26	3.88	4.70	6.00	7.23
Aug	3.04	2.71	8.19	1959	17	7.95	1977	.12	1996	6.2	4.8	2.0	.9	.41	.65	1.09	1.51	1.96	2.45	3.01	3.71	4.66	6.20	7.70
Sep	2.89	2.52	2.80	1977	19	8.85	1993	.50	1999	5.6	4.3	2.0	.9	.50	.75	1.17	1.57	1.98	2.42	2.92	3.53	4.34	5.66	6.92
Oct	2.94	2.36	4.81	1967	17	8.44	1983	.42	2000	7.0	4.8	2.2	.9	.67	.94	1.37	1.76	2.15	2.56	3.02	3.56	4.29	5.43	6.51
Nov	4.47	4.43	3.96	1991	20	12.46	1993	.57	1976	7.9	6.0	3.0	1.3	.93	1.34	1.99	2.59	3.19	3.84	4.57	5.44	6.59	8.44	10.19
Dec	3.56	3.17	3.95	1982	3	11.94	1982	.89	1980	7.5	5.9	2.6	1.0	.91	1.25	1.77	2.22	2.68	3.15	3.68	4.30	5.12	6.42	7.62
Ann	43.19	43.16	8.77	Apr 1996	29	13.94	Apr 1996	.12	Aug 1996	92.6	68.2	29.6	12.2	31.06	33.42	36.44	38.73	40.76	42.71	44.73	46.97	49.67	53.59	56.97

+ 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: BENTON 2 N, IL

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NWS Call Sign:

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Lat: 38°02N

Lon: 88°55W

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	4.3	2.5	#	0	9.0	1978	17	14.5	1977	7	1985	5	3	1985	1.7	1.4	.6	.3	.0	.2	.2	.1	.0
Feb	1.5	.5	#	0	7.0	1984	27	7.0	1984	14	1984	29	3	1985	1.5	1.0	.2	.2	.0	.8	.3	.2	.1
Mar	1.2	.0	#	0	4.0	1978	3	5.0	1984	4+	1994	9	#+	1994	.6	.4	.2	.0	.0	.3	.1	.0	.0
Apr	.6	.0	0	0	11.0	1971	6	11.0	1971	11	1971	6	1	1971	.1	.1	.1	.1	.1	.1	.1	.1	@
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	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	.5	.0	#	0	6.0	1977	27	6.0	1977	3	1975	27	#	1975	.1	.1	.1	.1	.0	@	@	.0	.0
Dec	1.6	.0	#	0	9.0	1973	20	9.0	1973	5	1984	6	#	1984	.4	.4	.4	.1	.0	.1	.1	.1	.0
Ann	9.7	3.0	N/A	N/A	11.0	Apr 1971	6	14.5	Jan 1977	14	Feb 1984	29	3+	Feb 1985	4.4	3.4	1.6	.8	.1	1.5	.8	.5	.1

+ 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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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	5/09	5/04	4/30	4/26	4/23	4/20	4/17	4/13	4/08
32	4/24	4/20	4/17	4/15	4/12	4/10	4/07	4/04	3/31
28	4/15	4/10	4/06	4/03	3/31	3/28	3/25	3/21	3/16
24	4/07	4/01	3/28	3/25	3/22	3/18	3/15	3/11	3/05
20	3/24	3/18	3/14	3/10	3/07	3/03	2/28	2/24	2/18
16	3/14	3/05	2/27	2/22	2/18	2/13	2/08	2/02	1/24
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	9/27	10/01	10/04	10/06	10/09	10/11	10/13	10/16	10/20
32	10/04	10/09	10/12	10/16	10/19	10/21	10/25	10/28	11/02
28	10/16	10/22	10/27	10/31	11/03	11/06	11/10	11/14	11/20
24	10/29	11/04	11/09	11/12	11/16	11/20	11/23	11/28	12/04
20	11/03	11/11	11/16	11/21	11/25	11/29	12/04	12/09	12/17
16	11/20	11/26	12/01	12/05	12/09	12/12	12/16	12/21	12/28
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	185	179	175	171	168	164	160	156	150
32	206	200	196	192	188	185	181	177	170
28	239	231	225	221	216	212	207	201	194
24	260	252	247	243	239	235	230	225	218
20	287	279	273	267	263	258	253	247	238
16	327	315	307	300	293	287	280	271	260

* 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	1080	827	601	289	108	4	0	1	41	266	561	934	4712
60	925	689	456	171	48	0	0	0	12	157	419	781	3658
57	833	611	371	115	26	0	0	0	5	107	338	696	3102
55	779	559	318	84	16	0	0	0	2	80	288	638	2764
50	633	432	206	31	4	0	0	0	0	32	182	497	2017
32	223	113	15	0	0	0	0	0	0	0	11	139	501

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	166	210	437	714	1034	1264	1452	1392	1120	787	441	228	9245
55	9	12	27	109	337	574	739	679	432	153	28	13	3112
57	1	8	18	80	284	514	677	617	375	118	18	10	2720
60	0	1	9	45	213	424	584	524	292	76	9	2	2179
65	0	0	0	14	118	278	429	371	172	29	1	0	1412
70	0	0	0	3	52	146	274	226	82	8	0	0	791

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	37	84	239	479	782	1017	1185	1087	878	534	247	67	37	121	360	839	1621	2638	3823	4910	5788	6322	6569	6636
45	15	42	143	346	627	867	1030	932	728	384	156	31	15	57	200	546	1173	2040	3070	4002	4730	5114	5270	5301
50	3	17	77	220	473	717	875	777	579	260	83	9	3	20	97	317	790	1507	2382	3159	3738	3998	4081	4090
55	0	4	39	129	326	567	720	622	433	153	40	3	0	4	43	172	498	1065	1785	2407	2840	2993	3033	3036
60	0	0	18	64	199	420	565	467	295	77	14	0	0	0	18	82	281	701	1266	1733	2028	2105	2119	2119
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	25	53	144	286	496	690	812	728	580	334	141	37	25	78	222	508	1004	1694	2506	3234	3814	4148	4289	4326

(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