U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data,
and Information Service

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: NORTH VERNON 2 ESE, IN **COOP ID: 126435**

Climate Division: IN 9 **NWS Call Sign:** **Elevation: 740 Feet** **Lat: 39˚00N** **Lon: 85˚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	38.5	21.6	30.1	73	1950	25	39.7	1990	-24	1977	17	14.9	1977	1084	0	.0	.0	6.1	9.8	25.2	2.3
Feb	44.6	25.4	35.0	76	1972	29	44.4	1976	-16	1951	2	20.7	1978	841	0	.0	.0	10.3	5.2	20.4	1.3
Mar	55.0	34.1	44.6	85	1986	31	52.3	1973	-6	1980	3	37.0	1984	634	0	.0	.0	20.6	.9	15.4	.1
Apr	65.7	42.6	54.2	89	1962	30	60.2	1981	19+	1990	7	48.9	1997	331	6	.0	.0	28.0	.0	5.3	.0
May	75.0	52.3	63.7	95+	1962	17	69.9+	1991	25	1966	10	58.7	1997	133	92	.0	.2	31.0	.0	.5	.0
Jun	82.7	61.1	71.9	101	1988	25	75.4	1984	36	1966	1	67.7	1992	10	217	@	3.7	30.0	.0	.0	.0
Jul	86.0	65.0	75.5	105	1954	14	79.1	1999	45+	1962	27	72.6	2000	0	324	.2	8.2	31.0	.0	.0	.0
Aug	84.1	63.0	73.6	103	1983	21	79.0	1983	40+	1965	29	69.0	1992	6	271	.1	5.4	31.0	.0	.0	.0
Sep	78.4	55.7	67.1	101	1954	5	72.1	1998	32+	1962	29	62.0	1974	58	120	.0	1.8	30.0	.0	.0	.0
Oct	67.4	44.3	55.9	91+	1959	3	63.0	1971	18+	1962	26	48.7	1988	303	20	.0	@	30.3	.0	3.7	.0
Nov	54.4	36.1	45.3	82+	1958	17	51.1	1999	-2	1958	30	37.3	1976	593	0	.0	.0	19.5	.3	11.9	.0
Dec	43.0	26.8	34.9	74+	1982	3	43.7	1982	-22	1989	22	20.9	1989	934	0	.0	.0	8.5	5.1	21.7	1.0
Ann	64.6	44.0	54.3	105	Jul 1954	14	79.1	Jul 1999	-24	Jan 1977	17	14.9	Jan 1977	4927	1050	.3	19.3	276.3	21.3	104.1	4.7

\+ 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/normals/usnormals.html

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1948-2001

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Issue Date: February 2004

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Precipitation (inches)

Precipitation Totals

Month	Means/ Medians(1) Mean	Means/ Medians(1) Median	Extremes Highest Daily(2)	Year	Day	Highest Monthly(1)	Year	Lowest Monthly(1)	Year
Jan	2.97	2.60	4.80	1959	21	7.82	1982	.00	1984
Feb	2.71	2.81	3.02	1975	23	5.64	2000	.25	1978
Mar	3.76	3.20	4.10	1964	9	8.85	1973	1.38	1994
Apr	4.37	4.71	4.00	1996	29	9.83	1998	1.39	1976
May	4.72	4.21	4.30	1968	24	10.72	1990	1.41	1988
Jun	3.82	3.44	6.50	1960	23	8.42	1998	.41	1991
Jul	4.42	4.23	4.30	1957	5	12.49	1992	1.10	1983
Aug	4.42	4.03	4.80	1979	20	10.08	1979	1.51	1996
Sep	2.89	2.74	4.20	1956	15	6.46	1974	.17	1997
Oct	3.19	2.76	4.02	1983	20	9.94	1983	1.31	1997
Nov	3.83	3.76	2.80	1948	19	7.63	1979	1.60	1976
Dec	3.40	3.32	3.40	1948	15	7.43	1990	.48	1976
Ann	44.50	45.62	6.50	Jun 1960	23	12.49	Jul 1992	.00	Jan 1984

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	10.3	6.2	2.0	.6
Feb	8.7	5.8	1.6	.6
Mar	10.3	7.4	3.0	.7
Apr	10.7	7.6	2.7	1.1
May	10.1	7.5	3.3	1.4
Jun	9.2	6.7	2.6	.8
Jul	8.3	6.4	2.8	1.3
Aug	8.8	5.9	2.7	1.2
Sep	7.4	5.2	2.0	.7
Oct	8.0	5.5	1.9	.7
Nov	10.0	6.8	2.8	.9
Dec	9.8	6.6	2.4	.9
Ann	111.6	77.6	29.8	10.9

Precipitation Probabilities (1)

Probability that the monthly/annual precipitation will be equal to or less than the indicated amount

Monthly/Annual Precipitation vs Probability Levels
These values were determined from the incomplete gamma distribution

Month	.05	.10	.20	.30	.40	.50	.60	.70	.80	.90	.95
Jan	.66	1.09	1.58	1.97	2.34	2.72	3.14	3.62	4.24	5.21	6.10
Feb	.59	.84	1.24	1.60	1.96	2.34	2.77	3.29	3.98	5.07	6.10
Mar	1.34	1.69	2.21	2.64	3.05	3.47	3.93	4.47	5.15	6.21	7.18
Apr	1.51	1.93	2.53	3.03	3.52	4.02	4.57	5.20	6.02	7.28	8.44
May	1.68	2.12	2.77	3.31	3.83	4.36	4.93	5.61	6.47	7.79	9.01
Jun	1.01	1.37	1.92	2.41	2.89	3.39	3.95	4.61	5.48	6.83	8.10
Jul	1.41	1.83	2.45	2.98	3.49	4.02	4.60	5.29	6.16	7.53	8.79
Aug	1.24	1.66	2.29	2.85	3.39	3.95	4.58	5.32	6.28	7.79	9.20
Sep	.64	.91	1.33	1.71	2.10	2.51	2.96	3.51	4.23	5.38	6.47
Oct	1.09	1.40	1.83	2.20	2.56	2.93	3.33	3.79	4.39	5.31	6.16
Nov	1.63	1.98	2.46	2.86	3.23	3.61	4.01	4.48	5.06	5.96	6.77
Dec	1.11	1.43	1.90	2.31	2.70	3.10	3.54	4.05	4.72	5.75	6.70
Ann	33.97	36.07	38.72	40.71	42.47	44.16	45.89	47.79	50.08	53.38	56.20

\+ 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

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Snow (inches)

Snow Totals

Means/Medians (1)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	6.0	2.3	1	#
Feb	3.3	1.7	1	#
Mar	1.3	.0	#	0
Apr	.1	.0	#	0
May	#	.0	0	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.0	.0	0	0
Oct	.0	.0	0	0
Nov	.3	.0	#	0
Dec	2.9	1.5	#	0
Ann	13.9	5.5	N/A	N/A

Extremes (2)

Month	Highest Daily Snow Fall	Year	Day	Highest Monthly Snow Fall	Year	Highest Daily Snow Depth	Year	Day	Highest Monthly Mean Snow Depth	Year
Jan	6.5	1977	5	26.1	1977	16	1977	14	10	1977
Feb	6.0	1972	6	13.8	1979	11	1977	1	7	1978
Mar	9.0	1980	1	9.0	1980	12	1996	21	1	1996
Apr	3.0	1977	6	3.0	1977	#	1974	8	#	1974
May	#	1989	6	#	1989	0	0	0	0	0
Jun	.0	0	0	.0	0	0	0	0	0	0
Jul	.0	0	0	.0	0	0	0	0	0	0
Aug	.0	0	0	.0	0	0	0	0	0	0
Sep	.0	0	0	.0	0	0	0	0	0	0
Oct	.0	0	0	.0	0	0	0	0	0	0
Nov	1.5	1971	6	3.3	1971	2	1971	6	#+	1995
Dec	7.0	1984	6	9.5+	2000	7	2000	31	2	2000
Ann	9.0	Mar 1980	1	26.1	Jan 1977	16	Jan 1977	14	10	Jan 1977

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	2.1	1.7	.6	.1	.0
Feb	1.5	.8	.2	.2	.0
Mar	.5	.3	.1	.1	.0
Apr	@	@	@	.0	.0
May	.0	.0	.0	.0	.0
Jun	.0	.0	.0	.0	.0
Jul	.0	.0	.0	.0	.0
Aug	.0	.0	.0	.0	.0
Sep	.0	.0	.0	.0	.0
Oct	.0	.0	.0	.0	.0
Nov	.2	.1	.0	.0	.0
Dec	1.4	1.1	.3	.1	.0
Ann	5.7	4.0	1.2	.5	.0

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	3.7	2.4	2.2	1.5
Feb	3.9	2.3	1.3	.1
Mar	.3	.1	.1	.0
Apr	.0	.0	.0	.0
May	.0	.0	.0	.0
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.0	.0	.0	.0
Oct	.0	.0	.0	.0
Nov	.2	.0	.0	.0
Dec	1.5	.1	.0	.0
Ann	9.6	4.9	3.6	1.6

+ 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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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	5/19	5/14	5/10	5/07	5/04	5/01	4/28	4/25	4/20
32	5/10	5/04	4/30	4/27	4/23	4/20	4/16	4/12	4/06
28	4/21	4/17	4/14	4/12	4/09	4/07	4/04	4/01	3/28
24	4/15	4/10	4/07	4/04	4/02	3/30	3/27	3/24	3/19
20	4/05	3/30	3/25	3/22	3/18	3/15	3/11	3/07	3/01
16	3/22	3/15	3/10	3/06	3/03	2/27	2/23	2/18	2/12

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	9/24	9/27	9/29	10/01	10/03	10/05	10/07	10/09	10/12
32	10/05	10/09	10/12	10/15	10/17	10/19	10/22	10/25	10/29
28	10/10	10/16	10/20	10/24	10/28	10/31	11/04	11/08	11/15
24	10/22	10/28	11/02	11/06	11/09	11/13	11/17	11/21	11/28
20	11/02	11/09	11/14	11/18	11/22	11/26	12/01	12/06	12/13
16	11/15	11/22	11/27	12/02	12/06	12/10	12/15	12/20	12/27

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	167	162	158	154	151	148	144	140	134
32	198	190	185	180	176	172	167	162	155
28	221	214	209	205	201	197	192	187	180
24	238	232	228	224	221	218	214	210	204
20	274	265	259	253	248	243	237	231	222
16	304	295	288	283	278	272	267	260	252

***** 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)

Heating Degree Days (1)

Base Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	1084	841	634	331	133	10	0	6	58	303	593	934	4927
60	929	701	488	202	62	2	0	0	18	186	446	779	3813
57	836	623	403	138	35	0	0	0	7	129	363	694	3228
55	777	571	349	103	22	0	0	0	4	98	310	636	2870
50	634	443	232	40	6	0	0	0	0	42	195	495	2087
32	217	116	21	0	0	0	0	0	0	0	10	135	499

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	156	200	410	665	982	1197	1347	1288	1052	739	407	224	8667
55	4	10	25	77	291	507	634	575	366	125	18	12	2644
57	0	6	16	53	242	447	572	513	309	94	11	8	2271
60	0	0	9	26	176	358	479	420	230	57	3	0	1758
65	0	0	0	6	92	217	324	271	120	20	0	0	1050
70	0	0	0	1	37	100	176	142	47	4	0	0	507

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	85	226	444	736	963	1114	1060	827	511	218	72	37	122	348	792	1528	2491	3605	4665	5492	6003	6221	6293
45	17	42	141	306	581	813	959	905	677	366	133	36	17	59	200	506	1087	1900	2859	3764	4441	4807	4940	4976
50	4	18	79	197	430	663	804	750	527	235	69	16	4	22	101	298	728	1391	2195	2945	3472	3707	3776	3792
55	0	4	40	110	284	513	649	595	383	129	29	3	0	4	44	154	438	951	1600	2195	2578	2707	2736	2739
60	0	0	16	52	169	366	494	440	250	59	7	0	0	0	16	68	237	603	1097	1537	1787	1846	1853	1853
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	22	52	144	279	474	657	769	725	546	313	122	36	22	74	218	497	971	1628	2397	3122	3668	3981	4103	4139

(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.
Compete documentation for the 1971-2000 Normals is available on the internet from:
www.ncdc.noaa.gov/oa/climate/normals/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 are 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/normals.html
U.S. Climate Normals 1971-2000-Products Clim20, www.ncdc.noaa.gov/oa/climate/normals/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