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: PORTLAND 1 SW, IN **COOP ID: 127069**

Climate Division: IN 6 **NWS Call Sign:** **Elevation: 910 Feet** **Lat: 40˚26N** **Lon: 85˚17W**

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	32.1	15.2	23.7	64+	1995	14	33.8	1990	-29	1985	20	7.9	1977	1283	0	.0	.0	2.6	15.1	28.5	5.1
Feb	36.5	17.7	27.1	73	2000	26	37.7	1998	-16+	1978	8	10.8	1978	1062	0	.0	.0	4.5	11.3	24.8	3.7
Mar	47.7	27.4	37.6	81	1986	31	45.0	1973	-13	1984	9	27.5	1984	851	0	.0	.0	12.9	3.8	21.8	.4
Apr	60.1	37.8	49.0	87	1986	27	55.1	1985	10	1982	7	44.4	1975	483	1	.0	.0	23.7	.2	9.8	.0
May	71.1	48.7	59.9	91	1991	29	66.6	1991	27	1979	1	54.6	1997	216	57	.0	.2	30.5	.0	.8	.0
Jun	80.1	58.5	69.3	102	1988	26	73.1	1971	38+	1980	11	64.2	1992	31	159	@	2.7	30.0	.0	.0	.0
Jul	84.1	62.0	73.1	101	1988	16	77.3	1999	40+	1964	8	69.8	1984	3	252	.1	5.6	31.0	.0	.0	.0
Aug	81.7	59.5	70.6	100	1988	18	76.1	1995	38	1964	14	66.3	1992	21	195	@	2.7	31.0	.0	.0	.0
Sep	75.8	51.7	63.8	96	1983	11	68.0	1998	28	1995	23	59.5	1974	100	62	.0	1.0	30.0	.0	.4	.0
Oct	63.7	40.2	52.0	86+	1982	7	59.4	1971	17+	1976	28	45.3	1988	411	7	.0	.0	28.1	.0	6.8	.0
Nov	49.8	31.9	40.9	78	1999	2	45.9	1975	4+	1991	8	32.7	1976	725	0	.0	.0	14.5	1.6	17.6	.0
Dec	37.3	21.0	29.2	72	1982	3	37.5	1982	-21+	1989	22	16.3	1989	1112	0	.0	.0	4.4	10.0	26.0	2.0
Ann	60.0	39.3	49.7	102	Jun 1988	26	77.3	Jul 1999	-29	Jan 1985	20	7.9	Jan 1977	6298	733	.1	12.2	243.2	42.0	136.5	11.2

\+ 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

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

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	1.87	1.61	2.50	1950	4	3.62	1974	.53	1981
Feb	1.93	1.73	2.50	1997	27	6.41	1982	.08	1987
Mar	2.60	2.59	2.35	1952	11	5.71	1973	.43	1994
Apr	3.61	3.44	2.01	1972	20	7.36	1972	1.30	1997
May	3.94	3.94	2.95	1989	26	7.65	1981	.61	1988
Jun	4.13	4.35	4.19	1958	8	7.36	1998	.47	1988
Jul	4.40	3.77	3.11	1990	12	10.21	1992	.39	1975
Aug	3.96	3.39	4.00	1998	5	7.84	1979	1.31	1996
Sep	2.71	2.60	3.00	1969	17	8.91	1972	.47	1987
Oct	2.58	2.48	2.68	1959	11	6.55	1983	.58	1982
Nov	3.04	2.39	2.20	1951	14	7.65	1985	.26	1976
Dec	2.48	2.36	2.30	1967	3	6.77	1990	.42	1976
Ann	37.25	37.28	4.19	Jun 1958	8	10.21	Jul 1992	.08	Feb 1987

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	9.5	5.3	1.1	.1
Feb	8.2	4.7	1.0	.2
Mar	9.8	6.3	1.6	.3
Apr	11.4	7.8	2.6	.7
May	11.5	8.1	3.0	.6
Jun	9.6	7.6	3.0	1.1
Jul	9.0	6.9	3.0	1.5
Aug	8.5	6.2	2.9	1.1
Sep	7.7	5.3	2.0	.7
Oct	8.2	5.9	1.7	.5
Nov	9.2	6.4	2.2	.6
Dec	9.9	6.3	1.7	.3
Ann	112.5	76.8	25.8	7.7

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	.52	.69	.96	1.20	1.43	1.67	1.94	2.26	2.67	3.32	3.92
Feb	.32	.49	.77	1.03	1.31	1.60	1.94	2.36	2.91	3.81	4.67
Mar	.88	1.12	1.48	1.79	2.08	2.38	2.71	3.10	3.59	4.36	5.06
Apr	1.46	1.79	2.26	2.64	3.01	3.38	3.78	4.24	4.82	5.72	6.53
May	1.53	1.90	2.42	2.85	3.26	3.67	4.12	4.65	5.31	6.32	7.25
Jun	1.22	1.62	2.21	2.71	3.21	3.72	4.29	4.96	5.82	7.17	8.42
Jul	1.26	1.68	2.31	2.86	3.39	3.95	4.56	5.29	6.23	7.70	9.08
Aug	1.56	1.92	2.45	2.88	3.28	3.70	4.15	4.67	5.33	6.34	7.26
Sep	.60	.85	1.24	1.60	1.96	2.34	2.77	3.29	3.96	5.04	6.06
Oct	.85	1.10	1.46	1.76	2.06	2.36	2.69	3.08	3.58	4.36	5.07
Nov	.54	.81	1.25	1.67	2.09	2.55	3.08	3.71	4.55	5.92	7.22
Dec	.83	1.07	1.41	1.70	1.98	2.27	2.58	2.95	3.42	4.16	4.83
Ann	27.65	29.54	31.94	33.76	35.36	36.90	38.49	40.24	42.35	45.40	48.02

\+ 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)

Extremes (2)

Mean Number of Days (1)

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	5.7	5.5	1	1	6.0	1979	28	16.2	1979	18	1985	31	7	1985	4.0	2.9	.7	.2	.0	9.7	5.4	2.6	.1
Feb	5.3	4.3	2	#	8.0	1982	4	14.0	1980	22	1982	9	16	1978	3.1	2.1	.6	.2	.0	5.8	3.2	2.1	.8
Mar	3.0	1.8	#	#	8.0	1975	15	9.5	1975	10	1978	3	2	1984	1.5	1.0	.3	.2	.0	1.7	.8	.4	.0
Apr	.5	.0	#	0	4.0	1973	12	6.0	1982	4+	1982	9	#+	1994	.1	.1	.1	.0	.0	.1	.1	.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	4.0	1989	19	4.0	1989	4	1989	19	#+	1993	.1	.1	@	.0	.0	.1	@	.0	.0
Nov	.7	.0	#	#	4.0	1997	14	5.0	1980	3	1975	28	#+	1997	.6	.3	@	.0	.0	.6	.0	.0	.0
Dec	4.6	1.5	1	#	10.0	1973	20	22.0	1973	16	1977	12	5	1977	2.7	1.9	.6	.2	@	4.4	2.4	1.2	.5
Ann	20.0	13.1	N/A	N/A	10.0	Dec 1973	20	22.0	Dec 1973	22	Feb 1982	9	16	Feb 1978	12.1	8.4	2.3	.8	@	22.4	11.9	6.3	1.4

+ 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	5/22	5/17	5/13	5/10	5/07	5/04	5/01	4/27	4/22
32	5/12	5/08	5/04	5/01	4/29	4/26	4/23	4/20	4/15
28	4/30	4/26	4/23	4/20	4/18	4/15	4/13	4/10	4/06
24	4/19	4/15	4/12	4/10	4/07	4/05	4/02	3/30	3/26
20	4/11	4/06	4/02	3/30	3/27	3/24	3/20	3/17	3/11
16	4/04	3/28	3/23	3/19	3/16	3/12	3/08	3/03	2/25

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	9/20	9/24	9/26	9/29	10/01	10/03	10/05	10/08	10/12
32	9/24	9/28	10/02	10/05	10/07	10/10	10/12	10/16	10/20
28	10/07	10/12	10/16	10/19	10/22	10/25	10/29	11/01	11/07
24	10/18	10/24	10/28	10/31	11/04	11/07	11/10	11/14	11/20
20	10/30	11/05	11/10	11/14	11/18	11/22	11/26	11/30	12/07
16	11/10	11/17	11/23	11/27	12/02	12/06	12/10	12/16	12/23

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	164	158	154	150	146	143	139	135	128
32	179	173	168	164	161	157	153	149	143
28	207	200	195	191	187	183	179	174	167
24	231	224	218	214	209	205	201	195	188
20	258	251	245	240	235	231	226	220	213
16	289	279	272	266	260	254	248	241	231

***** 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	1283	1062	851	483	216	31	3	21	100	411	725	1112	6298
60	1128	922	696	339	124	7	0	4	37	275	575	957	5064
57	1035	838	605	260	82	3	0	0	17	205	487	864	4396
55	973	782	549	212	60	1	0	0	9	165	430	804	3985
50	819	652	407	112	22	0	0	0	1	85	297	660	3055
32	336	247	78	1	0	0	0	0	0	0	29	232	923

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	76	109	250	509	864	1118	1272	1197	952	618	294	143	7402
55	0	0	8	30	211	429	559	484	271	70	5	2	2069
57	0	0	2	18	171	371	497	422	219	49	2	0	1751
60	0	0	0	7	120	285	404	333	149	26	0	0	1324
65	0	0	0	1	57	159	252	195	62	7	0	0	733
70	0	0	0	0	21	66	119	93	17	0	0	0	316

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	13	25	116	298	625	882	1033	959	720	396	140	32	13	38	154	452	1077	1959	2992	3951	4671	5067	5207	5239
45	2	7	63	184	472	732	878	804	570	261	80	14	2	9	72	256	728	1460	2338	3142	3712	3973	4053	4067
50	0	2	35	103	326	583	723	649	423	157	39	4	0	2	37	140	466	1049	1772	2421	2844	3001	3040	3044
55	0	0	12	53	208	433	568	494	287	83	17	0	0	0	12	65	273	706	1274	1768	2055	2138	2155	2155
60	0	0	4	21	114	293	413	342	172	38	3	0	0	0	4	25	139	432	845	1187	1359	1397	1400	1400
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	3	14	74	184	377	577	702	640	458	246	83	15	3	17	91	275	652	1229	1931	2571	3029	3275	3358	3373

(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:
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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