

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: VALPARAISO WATERWORKS, IN

1971-2000

COOP ID: 128999

Climate Division: IN 1

NWS Call Sign:

Elevation: 800 Feet

Lat: 41° 31N

Lon: 87° 02W

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	30.2	15.5	22.9	67	1906	22	36.9	1990	-25	1985	20	9.0	1977	1307	0	.0	.0	1.6	16.9	28.7	4.9
Feb	35.6	19.8	27.7	71+	2000	25	37.8	1998	-21	1905	13	13.7	1978	1045	0	.0	.0	3.4	11.3	24.0	3.0
Mar	47.2	29.2	38.2	83	1981	31	45.5	2000	-13	1943	8	29.3	1984	831	0	.0	.0	12.2	3.1	20.2	.1
Apr	59.6	38.4	49.0	89	1942	30	54.6	1977	9	1920	6	43.7	1975	481	2	.0	.0	24.2	.1	7.6	.0
May	71.3	48.7	60.0	96	1934	31	67.2	1977	25+	1926	4	54.5	1997	216	61	.0	.3	30.6	.0	.6	.0
Jun	80.0	58.1	69.1	103	1934	1	72.9	1991	32	1917	16	64.1	1982	33	154	@	2.4	30.0	.0	.0	.0
Jul	83.1	62.8	73.0	105+	1934	23	77.4	1999	40	1918	31	69.2	1992	6	251	.0	4.2	31.0	.0	.0	.0
Aug	80.7	61.2	71.0	102	1934	9	78.2	1995	38	1965	29	66.4	1992	22	206	.0	2.0	31.0	.0	.0	.0
Sep	74.3	53.9	64.1	101	1939	14	68.4	1998	28+	1942	25	59.2	1993	90	63	.0	.8	30.0	.0	.1	.0
Oct	63.1	43.2	53.2	91	1922	2	59.4	1971	15	1917	31	47.4	1988	374	8	.0	.0	28.3	.0	3.7	.0
Nov	48.1	32.9	40.5	79+	1933	1	47.3	1999	-6	1950	25	32.8	1976	735	0	.0	.0	13.3	1.6	16.0	.0
Dec	35.1	22.0	28.6	68+	1982	2	38.1	1982	-22	1924	28	16.3	2000	1130	0	.0	.0	3.2	10.7	26.7	1.9
Ann	59.0	40.5	49.8	105+	Jul 1934	23	78.2	Aug 1995	-25	Jan 1985	20	9.0	Jan 1977	6270	745	@	9.7	238.8	43.7	127.6	9.9

+ 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: 1901-2001

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

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COOP ID: 128999

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NWS Call Sign:

Elevation: 800 Feet Lat: 41°31N

Lon: 87°02W

Precipitation (inches)

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	2.11	1.93	2.04	1975	10	3.90	1998	.43	1986	11.7	5.4	1.1	.3	.65	.85	1.14	1.40	1.65	1.91	2.19	2.53	2.96	3.63	4.25
Feb	1.82	1.55	2.13	1954	16	4.54	1985	.18	1987	9.3	4.8	.9	.2	.47	.64	.90	1.14	1.37	1.61	1.88	2.19	2.61	3.26	3.88
Mar	2.93	3.17	2.18	1944	14	5.58	1976	.54	1981	11.4	6.6	2.3	.4	.82	1.10	1.52	1.88	2.24	2.62	3.03	3.52	4.16	5.16	6.09
Apr	3.64	3.80	2.77	1956	29	8.08	1981	.51	1971	11.8	7.8	2.4	.8	1.15	1.50	2.01	2.45	2.87	3.31	3.79	4.36	5.09	6.22	7.26
May	3.85	3.58	3.20	1948	10	7.50	1991	.62	1992	11.8	7.5	2.4	1.2	1.12	1.49	2.04	2.52	2.98	3.47	4.00	4.63	5.45	6.72	7.91
Jun	4.66	3.88	5.28	1981	13	12.06	1993	.73	1988	10.8	7.4	3.2	1.3	1.27	1.72	2.39	2.98	3.55	4.16	4.83	5.62	6.65	8.26	9.77
Jul	3.82	3.20	7.34	1983	2	11.33	1983	1.01	1977	9.5	6.2	2.4	.9	1.34	1.70	2.23	2.67	3.09	3.52	3.99	4.54	5.25	6.33	7.33
Aug	3.91	3.16	7.34	1923	27	10.16	1980	1.18	1984	9.9	6.6	2.5	1.2	1.11	1.48	2.04	2.53	3.00	3.50	4.05	4.70	5.55	6.87	8.11
Sep	3.68	3.14	3.72	1972	14	10.32	1972	.04	1979	9.5	6.7	2.4	1.0	.61	.93	1.47	1.97	2.49	3.06	3.70	4.49	5.53	7.23	8.86
Oct	3.20	2.81	5.13	1954	10	9.56	1991	.82	1992	11.1	6.5	2.1	.7	1.06	1.36	1.81	2.19	2.55	2.92	3.33	3.81	4.43	5.39	6.27
Nov	3.56	3.31	4.05	1990	27	8.41+	1990	1.30	1999	11.4	7.6	2.0	.8	1.16	1.50	2.00	2.42	2.83	3.25	3.72	4.26	4.95	6.03	7.03
Dec	2.88	2.78	2.59	1965	24	5.27	1987	.70	1995	12.7	6.4	1.7	.6	.98	1.26	1.66	1.99	2.31	2.65	3.01	3.43	3.97	4.81	5.59
Ann	40.06+	38.81+	7.34+	Jul 1983	2	12.06	Jun 1993	.04	Sep 1979	130.9	79.5	25.4	9.4	30.72	32.58	34.94	36.71	38.27	39.76	41.30	42.98	45.01	47.93	50.43

+ 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: 1901-2001

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

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Station: VALPARAISO WATERWORKS, IN

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Climate Division: IN 1

NWS Call Sign:

Elevation: 800 Feet

Lat: 41°31N

Lon: 87°02W

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	11.9	11.9	4	3	10.9	1979	13	30.9	1979	24	1979	28	15	1979	7.3	4.1	1.1	.6	@	18.5	12.8	8.4	2.4
Feb	7.3	7.0	4	2	10.0	1974	25	22.0	1989	28	1979	18	22	1979	4.8	2.8	1.2	.3	@	8.8	5.8	3.8	2.3
Mar	5.4	4.4	1	#	8.0	1998	9	22.8	1993	18	1978	4	9	1978	2.6	1.9	.6	.3	.0	4.5	3.0	1.9	.3
Apr	1.1	.0	#	0	5.5	1982	6	9.5	1982	6	1982	6	1	1982	.5	.4	.1	.1	.0	.2	.2	@	.0
May	.0	.0	#	0	.5	1976	3	.5	1976	#	1997	1	#	1997	@	.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	1993	31	4.0	1993	3	1993	31	#+	1997	.1	.1	@	.0	.0	.1	@	.0	.0
Nov	3.1	1.3	#	#	7.0	1986	18	14.4	1978	6	1986	19	1	1997	1.8	1.2	.3	.1	.0	2.0	.9	.3	.0
Dec	9.6	9.4	2	1	20.0	1981	17	31.1	2000	22	1981	17	10	2000	5.2	2.8	1.1	.4	@	10.4	6.2	3.0	1.2
Ann	38.6	34.0	N/A	N/A	20.0	Dec 1981	17	31.1	Dec 2000	28	Feb 1979	18	22	Feb 1979	22.3	13.3	4.4	1.8	@	44.5	28.9	17.4	6.2

+ 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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Climate Division: IN 1

NWS Call Sign:

Elevation: 800 Feet

Lat: 41°31N

Lon: 87°02W

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	5/27	5/21	5/17	5/14	5/11	5/08	5/04	4/30	4/25
32	5/11	5/06	5/03	4/30	4/27	4/24	4/21	4/18	4/13
28	4/27	4/22	4/19	4/16	4/13	4/11	4/08	4/04	3/31
24	4/16	4/12	4/09	4/07	4/04	4/02	3/30	3/27	3/23
20	4/06	4/01	3/28	3/25	3/22	3/19	3/16	3/12	3/07
16	3/29	3/23	3/18	3/14	3/11	3/07	3/03	2/27	2/20
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	9/23	9/27	9/30	10/03	10/05	10/07	10/09	10/12	10/16
32	10/02	10/07	10/11	10/14	10/17	10/19	10/23	10/26	10/31
28	10/14	10/20	10/24	10/27	10/31	11/03	11/06	11/10	11/16
24	10/27	11/01	11/05	11/08	11/11	11/14	11/17	11/20	11/25
20	11/04	11/10	11/15	11/19	11/23	11/27	12/01	12/06	12/12
16	11/14	11/21	11/26	11/30	12/04	12/07	12/12	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	165	159	154	150	146	143	139	134	128
32	192	185	180	176	172	168	163	158	151
28	222	214	209	204	200	195	190	185	177
24	238	232	227	223	220	216	213	208	202
20	273	264	257	251	245	240	234	227	217
16	293	284	278	272	267	262	257	251	242

* 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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NWS Call Sign:

Elevation: 800 Feet Lat: 41°31N Lon: 87°02W

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	1307	1045	831	481	216	33	6	22	90	374	735	1130	6270
60	1152	905	676	339	125	8	0	4	30	242	586	975	5042
57	1059	821	586	262	84	3	0	0	12	176	499	882	4384
55	997	765	529	214	61	1	0	0	6	138	443	820	3974
50	844	635	388	117	24	0	0	0	1	68	311	676	3064
32	362	233	68	1	0	0	0	0	0	0	37	236	937

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	79	111	261	512	868	1111	1268	1207	963	656	292	128	7456
55	0	0	9	35	217	423	555	494	278	82	8	0	2101
57	0	0	3	22	177	364	493	432	224	58	4	0	1777
60	0	0	0	10	125	279	400	343	152	31	1	0	1341
65	0	0	0	2	61	154	251	206	63	8	0	0	745
70	0	0	0	0	23	64	123	103	17	0	0	0	330

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	6	24	113	304	631	885	1030	970	737	427	136	25	6	30	143	447	1078	1963	2993	3963	4700	5127	5263	5288
45	0	7	66	189	479	735	875	815	587	286	73	8	0	7	73	262	741	1476	2351	3166	3753	4039	4112	4120
50	0	1	32	111	335	585	720	660	438	176	32	4	0	1	33	144	479	1064	1784	2444	2882	3058	3090	3094
55	0	0	11	54	210	435	565	505	300	92	12	1	0	0	11	65	275	710	1275	1780	2080	2172	2184	2185
60	0	0	3	22	118	294	410	352	180	39	2	0	0	0	3	25	143	437	847	1199	1379	1418	1420	1420
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	13	71	184	387	578	703	655	462	241	68	7	0	13	84	268	655	1233	1936	2591	3053	3294	3362	3369

(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/normal/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