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: HOBART 2 WNW, IN **COOP ID: 124008**

Climate Division: IN 1 **NWS Call Sign:** **Elevation: 640 Feet** **Lat: 41˚33N** **Lon: 87˚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	30.4	13.9	22.2	67	1950	25	34.2	1990	-25	1985	20	9.2	1977	1328	0	.0	.0	2.1	15.2	28.6	4.7
Feb	35.1	17.7	26.4	71+	1999	11	36.2	1998	-18	1951	2	14.1	1978	1081	0	.0	.0	4.0	10.3	24.6	2.8
Mar	46.6	28.0	37.3	84	1981	31	44.4	1973	-1+	1960	6	28.0	1984	858	0	.0	.0	12.6	2.4	20.8	@
Apr	57.6	37.5	47.6	90	1986	26	54.6	1977	13	1972	8	40.6	1980	527	3	.0	@	23.7	.1	9.1	.0
May	69.8	47.8	58.8	94	1967	26	66.7	1977	26	1966	10	52.2	1997	247	54	.0	1.2	30.5	.0	1.2	.0
Jun	79.8	57.5	68.7	105	1988	25	73.5	1971	34	1972	11	62.8	1982	43	151	.2	4.7	30.0	.0	.0	.0
Jul	83.9	63.0	73.5	103	1988	16	77.5	1983	42+	1987	15	69.2	1979	6	268	.4	7.9	31.0	.0	.0	.0
Aug	81.3	61.3	71.3	102+	1988	1	77.2	1988	40	1951	23	66.2	1992	22	217	.1	4.6	31.0	.0	.0	.0
Sep	75.6	53.5	64.6	99+	1953	1	71.0	1978	29	1995	22	59.2	1993	90	77	.0	1.8	30.0	.0	.2	.0
Oct	63.8	42.0	52.9	91	1963	6	60.3	1971	21	1962	26	47.2	1987	381	6	.0	@	29.0	.0	4.2	.0
Nov	48.0	30.8	39.4	80	1950	1	45.7	1975	-5	1950	24	32.0	1995	768	0	.0	.0	14.4	1.3	16.7	.0
Dec	35.7	20.4	28.1	69	1982	2	37.5	1982	-29	1983	24	15.8	2000	1146	0	.0	.0	3.6	9.0	26.7	2.0
Ann	59.0	39.5	49.2	105	Jun 1988	25	77.5	Jul 1983	-29	Dec 1983	24	9.2	Jan 1977	6497	776	.7	20.2	241.9	38.3	132.1	9.5

\+ 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: 1948-2000

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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	1.90	1.90	2.00	1999	2	4.83	1999	.05	1981
Feb	1.52	1.37	2.05	1997	21	4.02	1990	.07	1987
Mar	2.73	2.59	4.10	1999	8	7.80	1999	.41	1981
Apr	3.58	3.30	3.20	1976	25	8.09	1981	.41	1971
May	3.92	3.81	2.85	1996	10	7.79	1996	.77	1992
Jun	4.47	4.05	5.10	1989	1	13.22	1993	.79	1988
Jul	3.52	3.59	5.52	1983	2	7.21	1983	1.02	1991
Aug	3.76	3.49	4.13	1955	30	9.45	1990	.58	1996
Sep	3.64	3.51	3.47	1964	21	7.71	1977	.14	1979
Oct	2.97	2.76	4.74	1954	10	7.79	1991	.96	1992
Nov	3.49	3.44	3.82	1994	1	8.62	1985	.30	1999
Dec	2.52	2.39	5.29	1949	22	5.49	1982	.27	1998
Ann	38.02	37.04	5.52	Jul 1983	2	13.22	Jun 1993	.05	Jan 1981

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	10.0	4.9	1.0	.3
Feb	8.0	4.4	.6	.3
Mar	10.4	6.1	1.7	.4
Apr	11.7	7.8	2.3	.8
May	11.3	7.5	2.5	.8
Jun	10.2	6.8	2.8	1.2
Jul	9.1	5.8	2.4	1.0
Aug	9.2	6.5	2.2	.9
Sep	8.9	5.9	2.3	1.1
Oct	10.1	6.2	2.0	.7
Nov	10.6	7.1	2.0	.7
Dec	10.3	5.7	1.3	.5
Ann	119.8	74.7	23.1	8.7

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	.23	.38	.65	.91	1.19	1.50	1.87	2.32	2.93	3.93	4.91
Feb	.28	.41	.64	.84	1.05	1.28	1.54	1.86	2.27	2.94	3.58
Mar	.64	.90	1.30	1.66	2.01	2.39	2.81	3.31	3.97	5.01	6.00
Apr	1.19	1.53	2.03	2.45	2.86	3.28	3.73	4.27	4.96	6.02	7.00
May	1.34	1.71	2.25	2.71	3.15	3.60	4.09	4.67	5.41	6.55	7.60
Jun	1.08	1.50	2.15	2.73	3.31	3.92	4.60	5.41	6.47	8.14	9.72
Jul	1.43	1.75	2.21	2.58	2.94	3.30	3.69	4.14	4.70	5.57	6.36
Aug	1.02	1.38	1.92	2.40	2.86	3.35	3.89	4.53	5.36	6.67	7.89
Sep	.76	1.09	1.62	2.11	2.60	3.13	3.72	4.43	5.37	6.88	8.30
Oct	.94	1.23	1.64	2.00	2.35	2.70	3.09	3.55	4.14	5.06	5.91
Nov	.78	1.10	1.61	2.07	2.53	3.02	3.57	4.23	5.10	6.47	7.77
Dec	.57	.80	1.17	1.50	1.83	2.19	2.58	3.05	3.67	4.66	5.59
Ann	29.04	30.82	33.09	34.79	36.28	37.72	39.20	40.82	42.77	45.58	47.99

\+ 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: 1948-2000
(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	9.6	11.0	4	3	13.0	1978	26	17.3	1976	29	1999	15	19	1999	4.1	2.5	1.0	.2	.1	16.5	12.8	6.9	1.4
Feb	6.7	6.4	3	1	7.0	1989	4	20.2	1989	28	1979	12	19	1979	3.2	2.3	1.1	.3	.0	7.9	5.7	2.8	.4
Mar	3.1	1.5	1	#	6.0	1982	4	11.0	1982	14	1998	9	4	1978	1.5	1.0	.2	.1	.0	2.3	1.2	.8	.0
Apr	.4	.0	#	0	5.0	1975	3	5.0	1975	6	1982	7	1	1982	.2	.2	.1	.1	.0	.1	@	@	.0
May	#	.0	#	0	#	1989	6	#	1989	#+	1999	27	#+	1999	.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	.1	.0	#	0	2.5	1972	18	2.5	1972	3	1972	18	#+	1997	@	@	.0	.0	.0	@	@	.0	.0
Nov	1.3	.3	#	#	5.5	1977	27	9.0	1977	6	1977	27	1	1977	.8	.4	.1	@	.0	.6	.4	.2	.0
Dec	5.9	5.3	1	1	6.5	1988	27	16.4	1983	11	1973	20	3	1989	3.0	1.9	.6	.2	.0	6.7	3.7	1.8	.0
Ann	27.1	24.5	N/A	N/A	13.0	Jan 1978	26	20.2	Feb 1989	29	Jan 1999	15	19+	Jan 1999	12.8	8.3	3.1	.9	.1	34.1	23.8	12.5	1.8

+ 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	5/31	5/25	5/21	5/18	5/14	5/11	5/07	5/03	4/27
32	5/19	5/14	5/10	5/07	5/04	5/01	4/28	4/25	4/20
28	4/28	4/24	4/21	4/18	4/15	4/13	4/10	4/07	4/03
24	4/19	4/15	4/12	4/09	4/07	4/04	4/02	3/30	3/26
20	4/09	4/03	3/30	3/27	3/24	3/21	3/17	3/13	3/08
16	4/01	3/26	3/21	3/17	3/14	3/10	3/06	3/01	2/23

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	9/22	9/25	9/28	9/30	10/03	10/05	10/07	10/10	10/14
32	9/28	10/03	10/07	10/10	10/13	10/16	10/20	10/24	10/29
28	10/14	10/19	10/23	10/26	10/28	10/31	11/03	11/06	11/11
24	10/27	11/01	11/04	11/07	11/10	11/12	11/15	11/18	11/23
20	11/07	11/13	11/17	11/20	11/24	11/27	12/01	12/05	12/11
16	11/14	11/21	11/26	11/30	12/03	12/07	12/11	12/16	12/22

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	159	153	148	144	141	137	133	129	122
32	180	174	169	165	161	158	154	149	143
28	216	209	204	199	195	191	187	182	174
24	237	230	225	220	216	212	208	202	195
20	269	261	254	249	244	239	234	228	219
16	286	278	273	268	264	260	255	250	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

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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	1328	1081	858	527	247	43	6	22	90	381	768	1146	6497
60	1173	941	703	385	151	12	0	4	31	247	618	991	5256
57	1080	857	611	307	106	5	0	0	14	179	530	898	4587
55	1018	801	552	259	81	3	0	0	6	140	472	836	4168
50	863	665	411	156	36	0	0	0	1	66	337	690	3225
32	366	248	73	4	0	0	0	0	0	0	44	246	981

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	61	91	238	470	830	1098	1285	1218	977	648	265	123	7304
55	0	0	5	35	197	411	572	505	293	74	4	0	2096
57	0	0	1	23	161	353	510	443	240	51	2	0	1784
60	0	0	0	11	113	270	417	354	168	27	0	0	1360
65	0	0	0	3	54	151	268	217	77	6	0	0	776
70	0	0	0	0	21	66	138	112	25	0	0	0	362

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	5	26	113	299	628	891	1062	1007	761	445	139	25	5	31	144	443	1071	1962	3024	4031	4792	5237	5376	5401
45	2	7	66	187	476	741	907	852	611	301	75	8	2	9	75	262	738	1479	2386	3238	3849	4150	4225	4233
50	0	0	35	108	331	591	752	697	466	187	33	3	0	0	35	143	474	1065	1817	2514	2980	3167	3200	3203
55	0	0	15	55	212	444	597	542	324	101	13	0	0	0	15	70	282	726	1323	1865	2189	2290	2303	2303
60	0	0	2	28	119	307	442	387	201	45	3	0	0	0	2	30	149	456	898	1285	1486	1531	1534	1534
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	16	80	189	391	586	719	679	482	267	77	7	0	16	96	285	676	1262	1981	2660	3142	3409	3486	3493

(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

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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