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: LAFAYETTE 8 S, IN **COOP ID: 124715**

Climate Division: IN 4 **NWS Call Sign:** **Elevation: 733 Feet** **Lat: 40˚18N** **Lon: 86˚54W**

Temperature (˚F)

Month	Mean (1) Daily Max	Mean (1) Daily Min	Mean (1) Mean	Extremes Highest Daily(2)	Extremes Year	Extremes Day	Extremes Highest Month(1) Mean	Extremes Year	Extremes Lowest Daily(2)	Extremes Year	Extremes Day	Extremes Lowest Month(1) Mean	Extremes Year	Degree Days (1) Base Temp 65 Heating	Degree Days (1) Base Temp 65 Cooling	Mean Number of Days (3) Max >= 100	Max >= 90	Max >= 50	Max <= 32	Min <= 32	Min <= 0
Jan	31.6	14.3	23.0	66	1967	25	35.0	1990	-25+	1963	28	6.7	1977	1303	0	.0	.0	2.4	16.0	28.5	6.0
Feb	36.9	18.3	27.6	74	2000	26	38.5	1998	-23	1963	26	10.9	1978	1047	0	.0	.0	4.7	10.6	24.4	3.8
Mar	48.5	28.7	38.6	82	1986	31	45.8	1973	-15	1960	6	28.2	1984	819	0	.0	.0	13.7	3.1	20.1	.3
Apr	60.7	38.7	49.7	89+	1986	26	55.6	1985	4	1982	7	43.5	1982	462	4	.0	.0	24.7	.1	8.0	.0
May	72.3	49.7	61.0	93+	1962	18	67.9	1977	24+	1966	10	55.1	1997	202	78	.0	.5	30.6	.0	.9	.0
Jun	81.4	58.9	70.2	104	1988	26	73.9	1991	36+	1966	1	64.2	1972	26	181	.1	4.3	30.0	.0	.0	.0
Jul	84.5	62.4	73.5	106	1954	15	78.0	1999	42+	1963	10	69.4	1971	5	267	.2	6.1	31.0	.0	.0	.0
Aug	82.5	60.4	71.5	98+	1983	21	79.0	1995	36	1965	29	67.3	1992	20	220	.0	3.3	31.0	.0	.0	.0
Sep	76.9	52.6	64.8	102	1954	6	70.4	1998	26	1995	23	59.6	1974	88	81	.0	1.5	30.0	.0	.3	.0
Oct	64.8	41.3	53.1	92	1954	4	60.3	1971	19+	1964	20	46.6	1988	382	11	.0	@	28.6	.0	6.4	.0
Nov	49.9	31.7	40.8	80	1999	2	47.5	1999	-2	1958	30	32.3	1976	726	0	.0	.0	14.8	1.5	16.7	.0
Dec	36.9	20.5	28.7	71	1998	7	37.7	1982	-25	1989	22	15.7	1989	1126	0	.0	.0	4.4	10.0	26.3	2.7
Ann	60.6	39.8	50.2	106	Jul 1954	15	79.0	Aug 1995	-25+	Dec 1989	22	6.7	Jan 1977	6206	842	.3	15.7	245.9	41.3	131.6	12.8

\+ 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: 1954-2001

(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	1.91	1.53	1.72	1959	21	4.65	1999	.09	1986
Feb	1.73	1.62	2.46	1959	10	6.48	1990	.08	1995
Mar	2.98	2.77	3.30	1990	11	6.36	1998	.53	1981
Apr	3.26	2.94	3.44	1994	12	7.59	1994	.48	1971
May	4.18	4.00	4.14	1989	26	9.05	1981	.59	1988
Jun	4.38	4.61	3.14	1964	21	11.07	1998	.26	1988
Jul	3.91	3.47	4.06	1979	4	11.87	1992	.52	1983
Aug	3.73	2.82	2.68	1977	6	9.78	1977	.85	1992
Sep	2.78	2.38	3.15	1965	15	7.34	1972	.00	1979
Oct	2.44	2.03	3.64	1977	1	5.53	1977	.77	1994
Nov	3.04	2.80	2.33	1966	27	8.72	1992	.42	1976
Dec	2.56	2.13	2.02	1987	15	6.19	1990	.25	1976
Ann	36.90	36.60	4.14	May 1989	26	11.87	Jul 1992	.00	Sep 1979

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	9.6	4.7	1.2	.2
Feb	7.7	4.1	1.1	.3
Mar	10.2	6.5	2.0	.4
Apr	10.9	7.3	2.1	.5
May	10.6	7.6	2.9	.9
Jun	10.4	7.3	2.8	1.2
Jul	8.9	6.4	2.8	1.0
Aug	8.4	6.0	2.6	1.2
Sep	7.6	5.3	1.9	.8
Oct	8.3	5.0	1.7	.4
Nov	9.8	5.9	2.2	.7
Dec	10.1	5.8	1.8	.3
Ann	112.5	71.9	25.1	7.9

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	.25	.41	.68	.95	1.23	1.54	1.89	2.33	2.93	3.90	4.85
Feb	.22	.35	.60	.84	1.09	1.38	1.71	2.11	2.67	3.57	4.45
Mar	.96	1.24	1.66	2.02	2.36	2.71	3.10	3.56	4.15	5.06	5.90
Apr	.93	1.24	1.70	2.11	2.51	2.92	3.38	3.93	4.63	5.73	6.76
May	1.11	1.50	2.11	2.64	3.16	3.71	4.32	5.04	5.99	7.47	8.86
Jun	.99	1.39	2.04	2.61	3.19	3.81	4.50	5.32	6.40	8.13	9.76
Jul	.90	1.26	1.84	2.35	2.86	3.40	4.01	4.74	5.70	7.22	8.65
Aug	1.11	1.46	1.99	2.45	2.90	3.36	3.88	4.48	5.26	6.48	7.62
Sep	.64	1.04	1.50	1.86	2.21	2.56	2.94	3.39	3.96	4.86	5.68
Oct	.85	1.08	1.42	1.70	1.97	2.25	2.55	2.91	3.36	4.06	4.70
Nov	.71	.99	1.44	1.84	2.23	2.65	3.12	3.68	4.42	5.58	6.68
Dec	.67	.92	1.29	1.61	1.93	2.27	2.64	3.09	3.66	4.58	5.43
Ann	28.38	30.08	32.24	33.85	35.27	36.64	38.04	39.58	41.43	44.09	46.37

\+ 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: 1954-2001
(3) Derived from 1971-2000 serially complete daily data

Complete documentation available from:
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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	6.5	5.1	2	2
Feb	4.8	4.5	2	1
Mar	2.9	2.6	#	#
Apr	.7	.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	.3	.0	#	0
Nov	.8	.0	#	0
Dec	5.2	3.6	1	#
Ann	21.2	15.8	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	11.0	1999	2	17.3	1978	18	1999	11	8	1999
Feb	11.5	1984	28	14.0	1984	16	1978	15	13	1978
Mar	9.0	2000	12	9.1	1984	11	1978	9	4	1978
Apr	4.6	1982	6	9.1	1982	5	1982	6	1	1982
May	#	1989	7	#	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	7.0	1989	20	7.7	1989	5	1989	20	#	1989
Nov	4.9	1975	27	5.1	1975	5	1975	27	#+	1996
Dec	11.0	1973	20	23.7	1973	17	1973	20	5	2000
Ann	11.5	Feb 1984	28	23.7	Dec 1973	18	Jan 1999	11	13	Feb 1978

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	5.3	2.2	.8	.3	@
Feb	3.3	1.2	.5	.1	@
Mar	1.7	1.0	.3	.1	.0
Apr	.3	.2	.1	.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	.1	@	@	@	.0
Nov	.9	.3	.1	.0	.0
Dec	3.5	1.8	.6	.2	@
Ann	15.1	6.7	2.4	.7	@

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	11.4	7.2	4.3	.8
Feb	9.1	5.5	3.5	1.7
Mar	3.3	1.7	.9	.1
Apr	.4	.2	@	.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	.1	.1	@	.0
Nov	.6	.1	@	.0
Dec	6.7	3.7	2.3	.3
Ann	31.6	18.5	11.0	2.9

+ 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	5/27	5/21	5/17	5/14	5/10	5/07	5/04	4/29	4/24
32	5/14	5/09	5/05	5/02	4/29	4/26	4/23	4/19	4/14
28	5/02	4/27	4/24	4/20	4/18	4/15	4/11	4/08	4/03
24	4/18	4/13	4/09	4/06	4/03	3/31	3/28	3/24	3/19
20	4/10	4/04	3/31	3/27	3/24	3/20	3/17	3/13	3/07
16	3/29	3/24	3/20	3/16	3/13	3/10	3/07	3/03	2/26

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	9/16	9/20	9/23	9/25	9/28	9/30	10/02	10/05	10/09
32	9/25	9/29	10/02	10/04	10/06	10/09	10/11	10/14	10/18
28	10/02	10/08	10/12	10/16	10/19	10/22	10/25	10/30	11/04
24	10/17	10/23	10/27	10/31	11/03	11/06	11/10	11/14	11/20
20	10/28	11/04	11/08	11/12	11/16	11/19	11/23	11/28	12/04
16	11/09	11/16	11/21	11/25	11/29	12/03	12/07	12/13	12/20

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	158	151	147	143	139	136	132	128	121
32	179	172	168	163	160	156	151	147	140
28	206	198	193	188	184	179	174	169	161
24	237	229	223	218	213	209	204	198	189
20	261	252	246	241	236	232	227	221	212
16	283	275	269	264	260	255	251	245	237

***** 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	1303	1047	819	462	202	26	5	20	88	382	726	1126	6206
60	1148	907	664	324	117	6	0	4	32	253	577	971	5003
57	1055	823	575	250	79	2	0	0	14	187	489	878	4352
55	993	771	518	205	58	1	0	0	7	149	435	822	3959
50	844	641	378	112	24	0	0	0	1	76	302	678	3056
32	365	247	66	1	0	0	0	0	0	0	35	253	967

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	85	124	270	533	899	1145	1285	1223	983	652	299	150	7648
55	0	4	9	46	244	456	572	510	300	88	9	6	2244
57	0	0	4	31	203	397	510	448	247	64	3	0	1907
60	0	0	0	16	149	311	417	359	175	37	1	0	1465
65	0	0	0	4	78	181	267	220	81	11	0	0	842
70	0	0	0	1	33	83	136	114	26	2	0	0	395

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	9	29	129	330	664	919	1055	994	761	427	149	30	9	38	167	497	1161	2080	3135	4129	4890	5317	5466	5496
45	3	8	74	216	512	769	900	839	611	294	88	15	3	11	85	301	813	1582	2482	3321	3932	4226	4314	4329
50	0	3	38	125	370	619	745	684	462	182	45	5	0	3	41	166	536	1155	1900	2584	3046	3228	3273	3278
55	0	0	17	64	240	473	590	529	325	102	20	0	0	0	17	81	321	794	1384	1913	2238	2340	2360	2360
60	0	0	4	29	137	330	435	375	203	50	4	0	0	0	4	33	170	500	935	1310	1513	1563	1567	1567
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	2	16	82	194	410	610	720	673	490	263	85	16	2	18	100	294	704	1314	2034	2707	3197	3460	3545	3561

(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