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: PAOLI, IN **COOP ID: 126705**

Climate Division: IN 8 **NWS Call Sign:** **Elevation: 560 Feet** **Lat: 38˚33N** **Lon: 86˚29W**

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	37.9	18.4	28.2	75	1943	24	38.7	1990	-29	1994	19	12.7	1977	1142	0	.0	.0	6.4	9.3	26.8	2.7
Feb	43.8	21.9	32.9	78	1932	10	40.3	1990	-26	1951	2	18.9	1978	900	0	.0	.0	10.6	5.4	22.4	1.7
Mar	54.5	31.0	42.8	88	1929	24	49.6	1973	-17	1960	6	35.1	1996	689	0	.0	.0	20.6	.9	17.3	.1
Apr	65.4	40.4	52.9	90+	1925	23	57.5	1977	12	1917	9	47.2	1997	368	4	.0	@	27.7	.0	7.0	.0
May	75.2	50.1	62.7	96+	1911	28	70.9	1987	25	1963	1	57.3	1997	159	86	.0	.8	30.9	.0	.9	.0
Jun	83.0	59.7	71.4	105	1936	29	76.3	1987	34	1913	11	66.5	1982	17	207	.1	5.9	30.0	.0	.0	.0
Jul	87.1	63.8	75.5	111	1901	22	79.7	1986	42+	1911	25	71.5	1984	0	323	.3	11.9	31.0	.0	.0	.0
Aug	85.4	61.5	73.5	106+	1911	10	78.5	1980	40+	1910	27	69.6	1982	6	269	.1	8.4	31.0	.0	.0	.0
Sep	79.2	52.8	66.0	105+	1953	2	70.3	1998	25	1942	29	61.6	1974	68	99	.0	3.0	30.0	.0	.2	.0
Oct	68.1	40.1	54.1	96	1953	3	61.6	1971	12	1925	29	46.7	1987	356	18	.0	.1	30.1	.0	7.0	.0
Nov	54.9	32.0	43.5	85	1950	1	49.8	1999	-5	1958	30	34.2	1976	647	0	.0	.0	20.1	.6	15.4	.0
Dec	42.7	22.7	32.7	77	1982	2	41.0	1971	-23	1917	11	19.7	1989	1002	0	.0	.0	10.0	5.4	23.8	1.3
Ann	64.8	41.2	53.0	111	Jul 1901	22	79.7	Jul 1986	-29	Jan 1994	19	12.7	Jan 1977	5354	1006	.5	30.1	278.4	21.6	120.8	5.8

\+ 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: 1901-2001

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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	3.29	2.93	4.01	1937	14	10.23	1982	.72	1981
Feb	3.10	2.61	4.19	1908	14	6.89	2000	.62	1978
Mar	4.37	3.39	4.29	1945	6	8.70	1989	1.90	1987
Apr	4.84	5.08	4.05	1996	29	10.69	1996	1.31	1976
May	5.14	4.41	4.88	1902	23	12.02	1995	.88	1988
Jun	4.19	4.36	4.25	1964	19	8.30	1998	.60	1988
Jul	4.46	4.13	5.73	1973	21	10.69	1979	.99	1983
Aug	4.17	3.39	4.10	1905	14	8.83	1977	.52	1996
Sep	3.26	2.81	4.25	1905	11	10.92	1996	.82	1998
Oct	2.90	2.58	4.37	1910	5	8.38	1983	.44	1992
Nov	4.22	3.87	2.90	1948	5	9.26	1985	1.35+	1999
Dec	3.64	3.72	3.43	1921	23	6.72	1978	.35	1989
Ann	47.58	48.74	5.73	Jul 1973	21	12.02	May 1995	.35	Dec 1989

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	9.2	6.2	2.4	.7
Feb	8.5	5.7	2.1	.8
Mar	10.3	7.8	3.2	1.3
Apr	10.6	8.3	3.3	1.1
May	10.4	8.3	3.4	1.5
Jun	9.0	6.8	3.2	1.1
Jul	9.0	6.6	3.0	1.5
Aug	8.1	6.2	3.0	1.5
Sep	7.3	5.1	2.4	1.1
Oct	7.3	4.9	2.0	.8
Nov	9.4	6.6	3.3	1.1
Dec	9.9	6.5	2.8	1.0
Ann	109.0	79.0	34.1	13.5

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	.83	1.14	1.62	2.04	2.46	2.90	3.39	3.98	4.74	5.94	7.07
Feb	.90	1.20	1.64	2.02	2.40	2.79	3.22	3.73	4.38	5.41	6.37
Mar	1.52	1.93	2.53	3.04	3.52	4.02	4.56	5.19	6.00	7.25	8.40
Apr	1.68	2.14	2.80	3.36	3.90	4.45	5.05	5.75	6.65	8.04	9.32
May	1.75	2.24	2.95	3.55	4.12	4.72	5.36	6.12	7.09	8.59	9.97
Jun	1.14	1.54	2.14	2.67	3.19	3.74	4.34	5.06	5.99	7.45	8.81
Jul	1.38	1.80	2.43	2.97	3.50	4.04	4.64	5.34	6.24	7.65	8.95
Aug	1.06	1.45	2.06	2.59	3.12	3.68	4.30	5.04	6.00	7.53	8.96
Sep	.69	.99	1.46	1.90	2.34	2.80	3.33	3.97	4.80	6.14	7.40
Oct	.80	1.08	1.50	1.86	2.22	2.59	3.00	3.49	4.13	5.12	6.05
Nov	1.46	1.86	2.44	2.93	3.40	3.88	4.41	5.02	5.81	7.02	8.14
Dec	1.10	1.44	1.96	2.40	2.84	3.28	3.78	4.36	5.11	6.28	7.37
Ann	32.84	35.66	39.29	42.06	44.52	46.91	49.39	52.13	55.47	60.32	64.53

\+ 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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Snow (inches)

Snow Totals

Means/Medians (1)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	1.8	1.6	1	#
Feb	2.9	3.6	#	#
Mar	.4	.0	#	#
Apr	.1	.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	.4	.0	#	0
Dec	2.5	2.0	#	#
Ann	8.1	7.2	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	7.7	1996	3	7.7	1996	13	1996	7	4	1996
Feb	7.4	1993	26	8.5	1998	9	1998	6	2	1993
Mar	6.0	1996	20	6.0	1996	8	1996	20	1	1996
Apr	2.0	1973	10	2.3	1973	#	1996	8	#	1996
May	.0	0	0	.0	0	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	2.0	1971	7	4.0	1971	2	1971	24	#+	1997
Dec	4.0	1972	16	7.4	1981	6	2000	30	2	2000
Ann	7.7	Jan 1996	3	8.5	Feb 1998	13	Jan 1996	7	4	Jan 1996

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	1.8	.9	.2	.2	.0
Feb	1.2	.8	.4	.2	.0
Mar	.6	.4	.2	.1	.0
Apr	.1	.1	.0	.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	.3	.2	.0	.0	.0
Dec	.9	.7	.3	.0	.0
Ann	4.9	3.1	1.1	.5	.0

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	2.8	1.5	1.1	.2
Feb	2.3	1.5	.7	.0
Mar	.6	.5	.2	.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	1.1	.3	.0	.0
Ann	7.0	3.8	2.0	.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

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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	5/23	5/17	5/13	5/10	5/07	5/04	4/30	4/26	4/21
32	5/13	5/08	5/04	5/01	4/28	4/25	4/22	4/18	4/13
28	4/28	4/24	4/21	4/18	4/15	4/13	4/10	4/07	4/02
24	4/15	4/11	4/08	4/06	4/03	4/01	3/29	3/26	3/22
20	4/06	3/31	3/26	3/22	3/19	3/16	3/12	3/08	3/02
16	3/27	3/20	3/16	3/12	3/09	3/05	3/01	2/25	2/18

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	9/28	9/30	10/02	10/04	10/06	10/10
32	9/25	9/30	10/04	10/07	10/09	10/12	10/15	10/18	10/23
28	10/05	10/11	10/15	10/18	10/22	10/25	10/28	11/01	11/07
24	10/20	10/25	10/28	10/31	11/03	11/06	11/08	11/12	11/17
20	10/27	11/02	11/07	11/11	11/15	11/19	11/23	11/28	12/04
16	11/06	11/14	11/19	11/23	11/27	12/01	12/06	12/11	12/18

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	153	149	145	142	138	133	126
32	183	176	171	167	164	160	156	151	145
28	208	201	196	192	188	185	180	176	169
24	233	226	221	217	213	209	205	200	193
20	265	256	250	245	240	235	230	224	215
16	289	280	273	268	263	258	252	246	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)

Base — Heating Degree Days (1)

Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	1142	900	689	368	159	17	0	6	68	356	647	1002	5354
60	987	760	538	234	82	4	0	0	23	233	498	847	4206
57	894	676	452	165	50	1	0	0	10	172	412	754	3586
55	834	622	396	126	34	0	0	0	5	137	358	701	3213
50	692	492	270	54	11	0	0	0	1	69	233	556	2378
32	259	131	28	0	0	0	0	0	0	0	14	168	600

Base — Cooling Degree Days (1)

Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	140	155	362	626	950	1180	1346	1285	1021	685	357	190	8297
55	2	2	17	63	271	491	633	572	336	109	12	9	2517
57	0	0	11	42	225	431	571	510	280	82	6	0	2158
60	0	0	4	20	164	344	478	417	204	50	2	0	1683
65	0	0	0	4	86	207	323	269	99	18	0	0	1006
70	0	0	0	0	36	99	180	141	34	5	0	0	495

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	34	70	204	423	729	960	1121	1059	810	481	210	67	34	104	308	731	1460	2420	3541	4600	5410	5891	6101	6168
45	15	30	120	293	576	810	966	904	660	341	124	35	15	45	165	458	1034	1844	2810	3714	4374	4715	4839	4874
50	1	13	69	184	423	661	811	749	512	218	62	13	1	14	83	267	690	1351	2162	2911	3423	3641	3703	3716
55	0	1	33	104	281	513	656	594	367	125	26	4	0	1	34	138	419	932	1588	2182	2549	2674	2700	2704
60	0	0	7	50	165	365	501	440	240	59	6	0	0	0	7	57	222	587	1088	1528	1768	1827	1833	1833
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	24	54	141	273	468	647	764	720	532	321	132	41	24	78	219	492	960	1607	2371	3091	3623	3944	4076	4117

(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