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: PERU, IL **COOP ID: 116753**

Climate Division: IL 2 **NWS Call Sign:** **Elevation: 620 Feet** **Lat: 41˚21N** **Lon: 89˚06W**

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	29.0	11.6	20.3	64	1997	5	32.4	1990	-26	1985	19	6.5	1977	1387	0	.0	.0	1.4	17.3	29.7	7.3
Feb	34.7	16.8	25.8	72	1976	27	37.5	1998	-21	1979	5	11.2	1979	1098	0	.0	.0	3.7	11.2	25.6	3.9
Mar	47.4	27.7	37.6	82	1998	31	44.6	2000	-4	1996	9	30.5	1984	852	0	.0	.0	13.0	3.4	21.1	.3
Apr	61.1	37.8	49.5	91+	1987	21	56.0	1981	13+	1982	7	43.9	1975	471	4	.0	.2	25.0	.1	7.7	.0
May	72.8	48.7	60.8	93+	2001	17	68.8	1977	25+	1989	7	55.1	1997	205	73	.0	1.5	30.6	.0	.9	.0
Jun	82.3	58.7	70.5	101+	1988	26	75.6	1971	37	1969	9	66.5	1974	17	182	.1	5.8	30.0	.0	.0	.0
Jul	85.3	63.1	74.2	104	1983	29	80.1	1983	42	1972	5	69.7	1992	5	289	.3	9.0	31.0	.0	.0	.0
Aug	83.1	61.0	72.1	103	1988	17	78.6	1983	40	1986	28	65.2	1992	25	243	.3	5.6	31.0	.0	.0	.0
Sep	76.5	51.9	64.2	98	2000	2	69.2	1978	27	1974	23	59.8	1993	94	70	.0	1.9	30.0	.0	.4	.0
Oct	64.8	40.6	52.7	91	1963	6	60.5	1971	16+	1988	30	46.1	1987	388	7	.0	@	28.6	.0	6.1	.0
Nov	48.0	29.8	38.9	79	2000	2	45.3	1999	-5	1977	26	30.1	1976	784	0	.0	.0	13.3	2.0	17.9	.1
Dec	34.6	18.0	26.3	70	1970	3	36.6	1982	-21	1989	23	13.4	2000	1199	0	.0	.0	3.2	11.2	28.1	3.5
Ann	60.0	38.8	49.4	104	Jul 1983	29	80.1	Jul 1983	-26	Jan 1985	19	6.5	Jan 1977	6525	868	.7	24.0	240.8	45.2	137.5	15.1

\+ 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: 1963-2001

(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	1.46	1.08	1.74	1966	12	3.37	1974	.06	1981
Feb	1.42	1.19	2.90	1997	21	5.03	1997	.04	1987
Mar	2.67	2.32	3.10	1985	3	6.00	1976	.87	1978
Apr	3.60	3.80	2.40	1983	2	8.14	1981	1.13	1977
May	4.55	4.30	4.25	1974	17	9.86	1974	.23	1992
Jun	4.10	3.67	3.50	1981	13	9.77	1972	.39	1988
Jul	4.04	4.00	4.15	1997	22	9.86	1982	.15	1991
Aug	4.11	3.31	4.50	1979	20	12.41	1979	.77	1976
Sep	3.63	3.06	3.22	1989	6	8.66	1989	.00	1979
Oct	3.00	2.39	3.92	1969	10	7.47	1984	.88	1999
Nov	2.83	2.13	2.02+	1990	28	9.22	1985	.25	1976
Dec	2.29	2.22	2.95	1965	24	5.64	1982	.32	1976
Ann	37.70	38.03	4.50	Aug 1979	20	12.41	Aug 1979	.00	Sep 1979

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	8.6	3.8	.7	.1
Feb	7.0	3.7	.8	.2
Mar	9.8	5.8	1.7	.4
Apr	10.7	6.7	2.6	1.0
May	11.3	7.4	3.0	1.3
Jun	8.8	6.6	2.8	1.2
Jul	9.2	6.4	2.5	1.1
Aug	8.6	6.3	2.7	1.2
Sep	7.5	5.3	2.3	1.2
Oct	7.7	5.4	2.2	.6
Nov	9.0	5.8	2.0	.5
Dec	8.5	5.2	1.2	.6
Ann	106.7	68.4	24.5	9.4

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	.22	.34	.55	.75	.96	1.19	1.46	1.78	2.22	2.93	3.61
Feb	.20	.32	.53	.72	.93	1.15	1.41	1.73	2.16	2.86	3.53
Mar	.66	.91	1.30	1.65	1.99	2.35	2.76	3.24	3.86	4.86	5.79
Apr	1.31	1.65	2.14	2.54	2.93	3.33	3.76	4.26	4.91	5.89	6.80
May	1.19	1.62	2.28	2.86	3.43	4.03	4.70	5.49	6.52	8.14	9.66
Jun	.98	1.36	1.96	2.49	3.02	3.59	4.22	4.96	5.95	7.51	8.97
Jul	.68	1.03	1.62	2.17	2.74	3.36	4.07	4.93	6.07	7.93	9.71
Aug	.83	1.20	1.81	2.36	2.91	3.51	4.19	5.00	6.07	7.79	9.42
Sep	.58	1.07	1.69	2.19	2.69	3.20	3.78	4.46	5.35	6.75	8.07
Oct	.86	1.14	1.58	1.95	2.31	2.69	3.12	3.61	4.26	5.26	6.20
Nov	.42	.65	1.06	1.45	1.86	2.31	2.83	3.46	4.31	5.69	7.03
Dec	.57	.79	1.12	1.42	1.71	2.02	2.36	2.77	3.30	4.15	4.94
Ann	27.62	29.59	32.11	34.01	35.69	37.31	38.99	40.83	43.06	46.28	49.05

\+ 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: 1963-2001
(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	6.3	6.9	3	2
Feb	3.7	2.0	2	2
Mar	2.9	1.0	#	#
Apr	.4	.0	#	0
May	#	.0	#	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.0	.0	0	0
Oct	.1	.0	#	0
Nov	1.3	.2	#	#
Dec	6.3	4.9	1	1
Ann	21.0	15.0	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	8.0	1984	30	11.7	1987	19	1999	12	10	1999
Feb	5.3	1990	23	10.4	1986	16	1982	5	11	1982
Mar	8.0	1972	29	12.0	1991	12	1991	14	2	1984
Apr	4.0	1975	2	4.0	1975	4	1975	2	#+	2000
May	#	1997	19	#	1997	#	1997	1	#	1997
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	3.2	1997	27	3.2	1997	3	1997	27	#+	1997
Nov	6.0	1975	27	7.0	1974	6	1975	27	1	1977
Dec	11.0	1987	15	26.6	2000	18	2000	31	10	2000
Ann	11.0	Dec 1987	15	26.6	Dec 2000	19	Jan 1999	12	11	Feb 1982

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	4.3	2.5	.8	.3	.0
Feb	2.8	1.7	.5	.1	.0
Mar	1.4	.9	.2	.1	.0
Apr	.2	.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	.0
Nov	.9	.4	.1	.1	.0
Dec	3.5	2.3	.9	.2	@
Ann	13.2	8.0	2.6	.8	@

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	14.9	8.1	3.7	.7
Feb	8.3	3.8	1.4	.2
Mar	2.6	1.0	.4	@
Apr	.1	.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
Nov	1.4	.3	.2	.0
Dec	7.9	3.9	1.8	.8
Ann	35.2	17.2	7.5	1.7

+ 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	5/14	5/11	5/08	5/05	5/03	4/29	4/24
32	5/14	5/08	5/04	5/01	4/27	4/24	4/21	4/17	4/11
28	4/28	4/22	4/19	4/15	4/12	4/09	4/05	4/01	3/27
24	4/18	4/13	4/10	4/07	4/05	4/02	3/30	3/27	3/22
20	4/09	4/04	3/31	3/28	3/26	3/23	3/20	3/16	3/12
16	4/02	3/27	3/22	3/18	3/14	3/10	3/06	3/02	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	9/19	9/23	9/25	9/28	9/30	10/02	10/05	10/08	10/12
32	9/24	9/29	10/02	10/05	10/08	10/10	10/13	10/16	10/21
28	10/06	10/12	10/16	10/19	10/23	10/26	10/30	11/03	11/09
24	10/16	10/22	10/27	10/30	11/03	11/06	11/10	11/15	11/21
20	10/29	11/04	11/08	11/12	11/16	11/19	11/23	11/27	12/03
16	11/03	11/10	11/14	11/18	11/22	11/26	11/30	12/05	12/11

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	148	144	140	136	131	124
32	180	174	170	166	162	159	155	151	144
28	221	211	204	199	193	188	182	175	165
24	236	227	222	216	212	207	202	196	188
20	257	249	243	239	234	230	225	220	212
16	281	271	264	258	252	247	240	233	223

***** 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	1387	1098	852	471	205	17	5	25	94	388	784	1199	6525
60	1232	958	697	332	120	3	0	7	33	255	635	1044	5316
57	1139	874	605	257	81	1	0	1	14	187	546	951	4656
55	1077	818	545	212	60	0	0	0	7	148	489	891	4247
50	922	689	404	118	25	0	0	0	1	74	355	746	3334
32	423	279	71	1	0	0	0	0	0	0	55	299	1128

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	59	104	242	525	891	1154	1308	1241	966	642	260	123	7515
55	0	0	3	46	238	464	595	528	283	76	5	2	2240
57	0	0	1	31	197	405	533	467	230	53	2	0	1919
60	0	0	0	16	143	318	440	379	159	28	0	0	1483
65	0	0	0	4	73	182	289	243	70	7	0	0	868
70	0	0	0	1	30	76	156	137	22	0	0	0	422

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	4	21	110	328	677	935	1076	1008	748	424	124	19	4	25	135	463	1140	2075	3151	4159	4907	5331	5455	5474
45	0	6	60	212	525	785	921	853	598	289	65	6	0	6	66	278	803	1588	2509	3362	3960	4249	4314	4320
50	0	0	31	120	374	635	766	698	450	174	28	1	0	0	31	151	525	1160	1926	2624	3074	3248	3276	3277
55	0	0	10	62	240	485	611	543	309	94	9	0	0	0	10	72	312	797	1408	1951	2260	2354	2363	2363
60	0	0	4	27	139	338	456	388	188	42	2	0	0	0	4	31	170	508	964	1352	1540	1582	1584	1584
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	15	72	204	418	615	726	677	481	264	70	8	0	15	87	291	709	1324	2050	2727	3208	3472	3542	3550

(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