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: LAGRANGE SEWAGE PLANT, IN **COOP ID: 124730**

Climate Division: IN 3 **NWS Call Sign:** **Elevation: 895 Feet** **Lat: 41˚39N** **Lon: 85˚25W**

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	29.3	14.0	21.7	61	1997	5	33.4	1990	-22+	1994	19	7.5	1977	1345	0	.0	.0	1.3	18.4	29.2	4.9
Feb	33.6	16.2	24.9	73	2000	26	35.4	1998	-22	1963	26	9.4	1978	1123	0	.0	.0	2.4	13.6	25.4	4.1
Mar	44.8	25.4	35.1	79	1990	15	42.7	2000	-10	1967	1	25.7	1978	927	0	.0	.0	10.4	4.4	23.3	.3
Apr	57.4	35.6	46.5	87	1990	26	53.2	1985	8	1972	8	39.7	1975	555	1	.0	.0	22.0	.3	11.3	.0
May	69.3	47.2	58.3	93	1977	20	66.0	1991	21	1966	10	51.9	1997	258	49	.0	.3	29.9	.0	1.4	.0
Jun	78.8	56.8	67.8	104	1988	26	72.1	1991	32+	1966	1	63.0	1982	46	130	.1	2.8	30.0	.0	@	.0
Jul	82.2	60.9	71.6	101+	1980	16	75.7	1999	40+	1963	4	68.6	1996	6	209	.1	4.7	31.0	.0	.0	.0
Aug	80.1	58.7	69.4	100	1964	4	76.2	1995	36	1965	29	65.5	1976	31	168	.0	2.2	31.0	.0	.0	.0
Sep	73.2	51.1	62.2	95+	1978	9	66.2	1998	28+	1962	21	56.1	1975	129	42	.0	.7	30.0	.0	.4	.0
Oct	60.9	39.8	50.4	88	1971	3	58.6	1971	17	1966	30	44.1	1976	460	6	.0	.0	26.8	.0	7.0	.0
Nov	46.9	30.8	38.9	75	1987	4	44.6	1999	6	1976	30	30.6	1976	786	0	.0	.0	11.9	2.5	18.2	.0
Dec	34.5	20.3	27.4	70	1982	3	36.8	1982	-19+	1983	24	15.3	2000	1166	0	.0	.0	3.0	11.7	27.5	2.0
Ann	57.6	38.1	47.9	104	Jun 1988	26	76.2	Aug 1995	-22+	Jan 1994	19	7.5	Jan 1977	6832	605	.2	10.7	229.7	50.9	143.7	11.3

\+ 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: 1962-2001

(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	1.79	1.66	1.85	1985	1	3.39	1993	.27	1983
Feb	1.76	1.35	2.26	1971	13	4.66	1971	.06	1987
Mar	2.67	2.49	1.85	1985	28	6.00	1976	.35	1981
Apr	3.34	3.11	2.28	2000	20	6.59	1999	1.15	1997
May	3.63	3.79	2.28	1996	10	6.33	1990	.70	1994
Jun	4.17	3.58	4.01	1996	18	11.26	1981	.47	1988
Jul	3.59	3.29	3.12	1968	24	8.14	1992	.58	1974
Aug	4.00	4.13	4.27	1963	3	7.39	1979	1.29	1984
Sep	3.46	3.40	3.12	1972	14	8.05	1972	.04	1979
Oct	2.79	2.48	3.61	1988	18	6.58	1991	.65	1982
Nov	2.89	2.60	2.48	1985	10	6.90	1985	1.01	1981
Dec	2.61	2.39	3.61	1965	25	5.31	1973	.88+	1998
Ann	36.70	37.19	4.27	Aug 1963	3	11.26	Jun 1981	.04	Sep 1979

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	11.5	5.2	.8	.2
Feb	8.9	4.6	.8	.3
Mar	10.4	6.3	1.6	.3
Apr	11.6	7.9	1.8	.6
May	11.5	7.3	2.4	.8
Jun	9.7	6.8	3.2	1.2
Jul	9.3	6.5	2.3	.9
Aug	9.5	6.7	2.7	1.1
Sep	9.0	5.9	2.4	.8
Oct	9.5	6.2	1.5	.5
Nov	10.9	6.5	1.7	.5
Dec	12.8	6.7	1.3	.4
Ann	124.6	76.6	22.5	7.6

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	.50	.67	.93	1.15	1.37	1.60	1.86	2.16	2.55	3.16	3.73
Feb	.25	.39	.65	.89	1.14	1.42	1.75	2.14	2.68	3.55	4.39
Mar	.82	1.08	1.46	1.78	2.09	2.42	2.78	3.20	3.74	4.59	5.38
Apr	1.53	1.83	2.23	2.56	2.87	3.17	3.50	3.87	4.34	5.05	5.70
May	1.52	1.85	2.31	2.69	3.05	3.41	3.80	4.25	4.82	5.69	6.48
Jun	1.26	1.66	2.25	2.76	3.25	3.77	4.33	5.00	5.86	7.20	8.44
Jul	1.24	1.58	2.07	2.49	2.89	3.30	3.75	4.27	4.94	5.98	6.94
Aug	1.55	1.93	2.45	2.89	3.31	3.73	4.19	4.72	5.39	6.43	7.37
Sep	.55	.85	1.35	1.83	2.32	2.86	3.47	4.23	5.23	6.86	8.42
Oct	.83	1.10	1.50	1.84	2.17	2.52	2.90	3.34	3.92	4.83	5.67
Nov	.90	1.17	1.58	1.93	2.27	2.62	3.01	3.46	4.04	4.95	5.80
Dec	.88	1.13	1.49	1.80	2.09	2.39	2.72	3.10	3.60	4.36	5.07
Ann	28.90	30.46	32.44	33.92	35.22	36.46	37.73	39.12	40.80	43.19	45.24

\+ 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: 1962-2001
(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	10.3	9.4	3	2
Feb	9.1	8.1	3	2
Mar	4.9	3.6	1	#
Apr	1.3	1.1	#	#
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	.6	.0	#	0
Nov	3.5	2.8	#	#
Dec	11.6	11.4	1	1
Ann	41.3	36.4	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	15.0	1978	26	35.2	1978	29	1978	29	10	1978
Feb	10.0	1982	1	19.7	1982	28	1978	1	20	1978
Mar	10.0	1973	17	16.5	1971	21	1978	3	9	1978
Apr	4.0	1972	1	5.2	1994	5	1994	7	#+	1996
May	#	1989	6	#+	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	6.7	1989	20	8.8	1989	4	1989	20	#+	1992
Nov	6.5	1974	14	13.0	1972	5	1986	20	1	1986
Dec	18.0	1973	20	25.0	1973	14	1973	20	4	1983
Ann	18.0	Dec 1973	20	35.2	Jan 1978	29	Jan 1978	29	20	Feb 1978

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	8.0	3.5	.9	.3	@
Feb	5.7	3.1	.8	.2	@
Mar	3.3	1.6	.5	.2	@
Apr	1.1	.6	.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	.2	.2	.1	@	.0
Nov	2.4	1.5	.4	.1	.0
Dec	6.8	3.2	.9	.2	@
Ann	27.5	13.7	3.7	1.0	@

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	18.6	12.5	8.1	1.9
Feb	14.2	10.0	6.2	1.9
Mar	5.2	3.0	1.7	.8
Apr	.8	.1	@	.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	.2	@	.0	.0
Nov	2.6	.9	.2	.0
Dec	12.0	5.8	2.6	.4
Ann	53.6	32.3	18.8	5.0

+ 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	6/01	5/26	5/22	5/19	5/15	5/12	5/08	5/04	4/28
32	5/22	5/16	5/12	5/09	5/05	5/02	4/28	4/24	4/18
28	5/09	5/04	4/30	4/26	4/23	4/20	4/16	4/12	4/06
24	4/21	4/17	4/14	4/12	4/10	4/08	4/05	4/03	3/30
20	4/14	4/09	4/06	4/02	3/31	3/28	3/25	3/21	3/16
16	4/06	3/31	3/27	3/23	3/20	3/16	3/13	3/08	3/02

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	9/18	9/22	9/24	9/27	9/29	10/01	10/04	10/06	10/10
32	9/23	9/28	10/02	10/05	10/08	10/10	10/13	10/17	10/22
28	10/06	10/12	10/16	10/20	10/23	10/27	10/30	11/04	11/10
24	10/15	10/22	10/27	11/01	11/05	11/09	11/13	11/18	11/25
20	10/27	11/03	11/08	11/13	11/17	11/21	11/25	12/01	12/08
16	11/13	11/18	11/22	11/26	11/29	12/02	12/06	12/10	12/15

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	156	149	144	140	136	132	128	123	116
32	176	169	163	159	154	150	146	140	133
28	211	201	194	188	183	177	171	164	155
24	235	226	219	213	208	203	197	190	181
20	259	249	242	236	231	225	219	212	203
16	277	269	263	258	254	249	244	238	231

***** 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	1345	1123	927	555	258	46	6	31	129	460	786	1166	6832
60	1190	983	772	410	159	13	0	7	52	322	636	1011	5555
57	1097	899	679	327	112	5	0	1	26	248	546	918	4858
55	1035	843	617	276	86	3	0	0	15	205	487	856	4423
50	880	707	474	164	38	0	0	0	3	116	348	709	3439
32	379	280	101	3	0	0	0	0	0	2	39	258	1062

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	58	80	198	439	814	1075	1226	1160	903	571	243	116	6883
55	0	0	1	22	187	387	513	447	228	61	2	0	1848
57	0	0	0	13	151	330	451	386	179	42	1	0	1553
60	0	0	0	5	105	248	358	298	115	23	0	0	1152
65	0	0	0	1	49	130	209	168	42	6	0	0	605
70	0	0	0	0	18	50	90	76	9	0	0	0	243

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	14	87	254	584	851	1000	935	690	359	112	21	5	19	106	360	944	1795	2795	3730	4420	4779	4891	4912
45	0	2	47	153	439	701	845	780	540	234	61	8	0	2	49	202	641	1342	2187	2967	3507	3741	3802	3810
50	0	0	23	84	297	551	690	625	395	134	26	3	0	0	23	107	404	955	1645	2270	2665	2799	2825	2828
55	0	0	7	43	182	409	535	470	258	69	7	0	0	0	7	50	232	641	1176	1646	1904	1973	1980	1980
60	0	0	1	18	101	271	380	320	149	27	0	0	0	0	1	19	120	391	771	1091	1240	1267	1267	1267
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	0	10	57	157	356	556	675	623	432	213	60	4	0	10	67	224	580	1136	1811	2434	2866	3079	3139	3143

(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