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: RUSHVILLE SEWAGE PLANT, IN **COOP ID: 127646**

Climate Division: IN 5 **NWS Call Sign:** **Elevation: 960 Feet** **Lat: 39˚36N** **Lon: 85˚27W**

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	33.6	17.4	25.5	71+	1906	21	35.7	1990	-28	1994	19	9.4	1977	1225	0	.0	.0	3.1	13.6	28.2	4.8
Feb	38.9	20.4	29.7	74	2000	26	38.4	1998	-20	1985	4	13.4	1978	990	0	.0	.0	6.0	9.5	24.1	3.1
Mar	49.8	29.7	39.8	86	1910	24	47.3	1976	-16	1978	2	31.5	1984	784	0	.0	.0	15.2	2.4	20.2	.2
Apr	61.8	39.1	50.5	89	1925	24	57.3	1985	14	1923	1	45.2	1975	439	2	.0	.0	25.0	@	7.2	.0
May	72.6	50.1	61.4	96	1911	28	68.2	1991	26+	1906	7	55.8	1997	188	74	.0	.2	30.8	.0	.4	.0
Jun	81.0	59.5	70.3	101	1934	28	73.9	1984	31	1966	1	65.1	1972	23	180	@	3.1	30.0	.0	.0	.0
Jul	84.3	63.2	73.8	108	1901	22	77.2	1983	40+	1937	1	70.8	1984	1	272	.1	5.4	31.0	.0	.0	.0
Aug	82.7	60.7	71.7	103+	1936	19	77.2	1995	36+	1915	31	67.1	1992	14	221	.1	3.0	31.0	.0	.0	.0
Sep	76.8	53.1	65.0	101	1953	3	69.4	1998	22	1928	26	60.6	1974	81	80	.0	1.3	30.0	.0	@	.0
Oct	65.1	41.5	53.3	90+	1919	1	60.9	1971	10	1906	11	45.0	1988	376	13	.0	.0	28.7	.0	6.3	.0
Nov	51.0	33.1	42.1	83	1950	1	48.2	1990	-5	1930	28	33.9	1976	689	0	.0	.0	15.7	1.3	16.9	.0
Dec	38.9	23.5	31.2	72+	1982	3	40.8	1982	-23+	1989	22	17.5	1989	1048	0	.0	.0	5.6	8.2	25.5	1.7
Ann	61.4	40.9	51.2	108	Jul 1901	22	77.2+	Aug 1995	-28	Jan 1994	19	9.4	Jan 1977	5858	842	.2	13.0	252.1	35.0	128.8	9.8

\+ 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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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	2.62	2.36	3.67	1949	5	5.76	1982	.17	1981
Feb	2.55	2.13	2.67	1965	10	5.30	1999	.22	1978
Mar	3.20	3.01	5.59	1913	25	6.79	1973	1.04	1994
Apr	4.22	3.75	3.59	1996	29	8.50	1998	1.23	1971
May	5.06	4.83	3.23	1933	13	12.65	1996	1.37	1988
Jun	4.34	4.36	4.43	1960	23	10.73	1998	.43	1991
Jul	4.37	4.47	3.89	1983	31	8.92	1979	.96	1974
Aug	3.59	2.84	3.55	1926	1	7.64	1974	.88	1972
Sep	2.88	2.48	3.35	1936	29	7.38	1986	.47	1998
Oct	2.85	2.62	3.99	1910	5	5.90	1983	.65	1982
Nov	3.59	2.80	3.05	1955	16	9.18	1985	.93	1976
Dec	3.09	2.89	4.00	1990	29	9.21	1990	.61	1976
Ann	42.36	42.39	5.59	Mar 1913	25	12.65	May 1996	.17	Jan 1981

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	11.0	6.3	1.6	.4
Feb	9.0	5.6	1.7	.4
Mar	10.5	6.8	2.0	.7
Apr	12.6	8.4	2.7	.9
May	11.7	8.7	3.3	1.7
Jun	10.5	7.5	3.2	1.1
Jul	9.7	6.8	2.9	1.4
Aug	8.4	6.0	2.6	1.3
Sep	7.8	5.0	2.0	.7
Oct	8.3	5.2	2.0	.8
Nov	10.9	6.8	2.5	.8
Dec	11.2	6.1	2.3	.6
Ann	121.6	79.2	28.8	10.8

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	.61	.86	1.24	1.58	1.92	2.28	2.69	3.17	3.80	4.81	5.75
Feb	.60	.83	1.21	1.54	1.87	2.22	2.62	3.09	3.70	4.68	5.60
Mar	1.10	1.40	1.84	2.21	2.57	2.94	3.34	3.81	4.41	5.34	6.19
Apr	1.71	2.09	2.64	3.09	3.52	3.95	4.42	4.95	5.64	6.68	7.63
May	1.88	2.36	3.04	3.60	4.14	4.70	5.30	5.99	6.88	8.24	9.49
Jun	1.17	1.58	2.21	2.76	3.30	3.86	4.49	5.23	6.20	7.71	9.13
Jul	1.68	2.09	2.67	3.15	3.61	4.07	4.57	5.16	5.90	7.04	8.08
Aug	1.01	1.35	1.87	2.32	2.76	3.22	3.72	4.32	5.10	6.32	7.46
Sep	.51	.76	1.18	1.58	1.98	2.42	2.91	3.52	4.32	5.62	6.86
Oct	.98	1.25	1.64	1.97	2.29	2.62	2.98	3.39	3.93	4.75	5.51
Nov	1.12	1.46	1.97	2.40	2.82	3.26	3.73	4.30	5.02	6.15	7.19
Dec	.88	1.17	1.61	2.00	2.38	2.77	3.20	3.72	4.38	5.43	6.40
Ann	32.60	34.55	37.01	38.86	40.48	42.05	43.65	45.40	47.52	50.56	53.16

\+ 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)

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	4.7	2.5	2	1	9.0	1994	16	21.8	1977	14	1978	31	10	1977	3.7	2.3	.4	.2	.0	8.7	5.2	3.2	1.4
Feb	4.5	2.0	1	#	9.0	1979	26	17.0	1979	14	1978	3	8	1978	2.3	1.5	.5	.1	.0	5.5	3.5	1.7	.4
Mar	1.4	.4	#	#	4.5	1999	9	9.0	1975	8	1984	1	2	1984	1.1	.6	.1	.0	.0	1.8	1.2	.3	.0
Apr	.3	.0	#	0	5.0	1974	9	5.0	1974	5	1974	9	#+	1994	.2	.1	@	@	.0	.1	@	@	.0
May	.0	.0	#	0	.1	1989	6	.1	1989	#	1989	6	#	1989	@	.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	.3	.0	#	0	2.5	1989	18	4.5	1989	3+	1993	31	#+	1993	.1	.1	.0	.0	.0	.1	.1	.0	.0
Nov	.6	.0	#	0	3.5	1980	18	3.5+	1980	4	1980	18	#+	2000	.5	.3	.1	.0	.0	.3	.1	.0	.0
Dec	2.6	1.3	#	#	6.0	1973	20	12.6	1973	10	1981	18	2	1989	2.0	.9	.4	.1	.0	3.6	1.8	.4	.0
Ann	14.4	6.2	N/A	N/A	9.0+	Jan 1994	16	21.8	Jan 1977	14+	Feb 1978	3	10	Jan 1977	9.9	5.8	1.5	.4	.0	20.1	11.9	5.6	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	5/17	5/12	5/08	5/05	5/02	4/29	4/26	4/22	4/17
32	5/07	5/02	4/28	4/25	4/22	4/20	4/17	4/13	4/08
28	4/26	4/21	4/17	4/14	4/11	4/08	4/05	4/02	3/28
24	4/14	4/09	4/05	4/03	3/31	3/28	3/25	3/22	3/17
20	4/04	3/30	3/26	3/22	3/19	3/16	3/13	3/09	3/04
16	3/25	3/19	3/14	3/11	3/07	3/04	2/28	2/24	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	9/24	9/27	9/29	10/02	10/04	10/05	10/08	10/10	10/13
32	10/01	10/05	10/08	10/11	10/14	10/16	10/19	10/22	10/26
28	10/11	10/16	10/20	10/23	10/26	10/29	11/02	11/05	11/11
24	10/21	10/26	10/30	11/02	11/05	11/08	11/12	11/16	11/21
20	11/02	11/09	11/14	11/19	11/23	11/27	12/01	12/06	12/13
16	11/13	11/20	11/26	11/30	12/04	12/08	12/13	12/18	12/25

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	172	166	161	158	154	151	147	142	136
32	193	187	182	177	173	169	165	160	153
28	220	212	207	202	197	193	188	183	175
24	239	232	227	223	219	215	210	205	198
20	273	264	258	253	248	243	237	231	222
16	294	286	281	276	271	267	262	256	248

***** 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	1225	990	784	439	188	23	1	14	81	376	689	1048	5858
60	1070	850	629	298	104	5	0	1	28	249	540	893	4667
57	977	766	543	223	67	2	0	0	12	185	453	805	4033
55	915	714	484	177	47	1	0	0	7	148	399	747	3639
50	769	583	347	88	17	0	0	0	1	77	269	603	2754
32	303	202	54	0	0	0	0	0	0	0	24	204	787

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	101	135	293	554	909	1146	1294	1230	988	660	325	178	7813
55	0	3	11	41	243	457	581	517	305	95	10	9	2272
57	0	0	7	26	201	398	519	455	250	70	4	5	1935
60	0	0	0	12	145	312	426	364	177	41	1	0	1478
65	0	0	0	2	74	180	272	221	80	13	0	0	842
70	0	0	0	0	30	79	133	109	24	3	0	0	378

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	18	39	135	339	674	918	1059	988	753	421	157	40	18	57	192	531	1205	2123	3182	4170	4923	5344	5501	5541
45	4	12	76	221	521	768	904	833	603	284	89	17	4	16	92	313	834	1602	2506	3339	3942	4226	4315	4332
50	0	4	40	127	373	618	749	678	455	171	44	6	0	4	44	171	544	1162	1911	2589	3044	3215	3259	3265
55	0	0	17	68	243	468	594	523	317	89	19	0	0	0	17	85	328	796	1390	1913	2230	2319	2338	2338
60	0	0	3	26	136	323	439	369	193	43	4	0	0	0	3	29	165	488	927	1296	1489	1532	1536	1536
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	5	25	88	207	412	608	722	667	485	264	90	24	5	30	118	325	737	1345	2067	2734	3219	3483	3573	3597

(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