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: ANDERSON SEWAGE PLANT, IN **COOP ID: 120177**

Climate Division: IN 5 **NWS Call Sign:** **Elevation: 845 Feet** **Lat: 40˚06N** **Lon: 85˚43W**

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	32.9	18.4	25.7	69+	1950	25	36.2	1990	-24	1985	20	10.5	1977	1220	0	.0	.0	2.7	14.5	27.5	3.9
Feb	37.9	22.4	30.2	73+	1999	11	39.7	1976	-15	1951	2	15.5	1978	975	0	.0	.0	5.4	10.3	22.6	2.2
Mar	49.0	32.0	40.5	81	1986	31	48.6	1973	-7	1980	2	30.6	1984	758	0	.0	.0	14.1	3.1	18.1	.1
Apr	60.8	41.0	50.9	87	1987	29	57.3	1985	16	1969	1	46.3	1982	426	3	.0	.0	24.5	.1	6.4	.0
May	71.8	51.1	61.5	93+	1953	30	69.0	1977	27+	1963	1	55.8	1997	193	82	.0	.4	30.7	.0	.6	.0
Jun	80.4	60.3	70.4	103	1954	26	74.0	1991	36	1956	2	65.5	1972	21	182	@	2.8	30.0	.0	.0	.0
Jul	83.8	64.1	74.0	105	1954	14	78.1	1999	44	1967	16	70.2	1984	4	282	.1	5.4	31.0	.0	.0	.0
Aug	81.6	62.2	71.9	101	1988	17	78.2	1995	40	1986	29	67.8	1992	17	232	@	2.9	31.0	.0	.0	.0
Sep	75.4	54.6	65.0	103	1953	2	69.5	1998	31	1993	30	60.7	1974	78	78	.0	.9	30.0	.0	.1	.0
Oct	63.7	43.6	53.7	92	1953	3	62.2	1971	19+	1962	26	46.6	1988	366	13	.0	.0	28.3	.0	4.0	.0
Nov	49.9	34.5	42.2	81	1950	1	48.0	1975	-4	1958	30	34.5	1976	685	0	.0	.0	15.3	1.5	14.4	.0
Dec	37.5	23.9	30.7	75	1982	2	41.3	1982	-22	1989	22	18.1	1989	1064	0	.0	.0	4.7	9.4	24.7	1.4
Ann	60.4	42.3	51.4	105	Jul 1954	14	78.2	Aug 1995	-24	Jan 1985	20	10.5	Jan 1977	5807	872	.1	12.4	247.7	38.9	118.4	7.6

\+ 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

Issue Date: February 2004

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1948-2001

(3) Derived from 1971-2000 serially complete daily data

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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	2.09	1.78	2.18	1950	3	4.59	1982	.38	1981
Feb	2.28	2.26	2.19	1977	26	5.69	1990	.34	1978
Mar	3.24	3.31	2.54	1964	9	5.75	1973	1.19	1981
Apr	3.84	3.71	2.54	1964	21	7.21	1989	1.07	1997
May	4.08	3.90	2.36	1989	25	7.12	1989	.89	1988
Jun	4.21	4.50	4.36	1957	28	9.86	1998	1.13	1984
Jul	4.28	3.90	3.30	1976	11	10.66	1979	.23	1974
Aug	3.43	3.36	2.50	1981	30	8.63	1990	.41	1996
Sep	2.95	2.44	2.75	1961	25	7.58+	1989	.39	1998
Oct	2.77	2.40	2.73	1959	11	5.96	1983	.89	1982
Nov	3.68	3.19	3.42	1993	14	8.36	1985	.49	1976
Dec	2.97	2.77	2.20	1967	3	6.56	1971	.46	1976
Ann	39.82	39.40	4.36	Jun 1957	28	10.66	Jul 1979	.23	Jul 1974

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	10.3	5.9	1.3	.1
Feb	9.4	5.3	1.4	.4
Mar	11.0	7.2	2.6	.4
Apr	12.4	8.4	2.6	.9
May	11.6	8.2	3.2	.9
Jun	9.4	7.2	3.0	1.0
Jul	8.8	6.3	3.4	1.4
Aug	8.4	6.4	2.4	1.1
Sep	8.0	5.4	1.9	.7
Oct	9.0	6.1	2.1	.4
Nov	10.3	6.6	2.5	1.0
Dec	10.9	6.6	2.1	.4
Ann	119.5	79.6	28.5	8.7

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	.55	.74	1.05	1.31	1.58	1.85	2.16	2.52	3.00	3.75	4.45
Feb	.55	.77	1.10	1.39	1.69	2.00	2.34	2.76	3.30	4.15	4.95
Mar	1.38	1.67	2.08	2.42	2.73	3.05	3.39	3.79	4.29	5.04	5.73
Apr	1.49	1.85	2.36	2.78	3.17	3.58	4.02	4.52	5.17	6.15	7.06
May	1.64	2.01	2.55	2.98	3.40	3.82	4.27	4.79	5.46	6.47	7.40
Jun	1.47	1.86	2.44	2.93	3.40	3.88	4.40	5.01	5.79	7.00	8.11
Jul	1.38	1.78	2.38	2.90	3.39	3.90	4.46	5.12	5.96	7.27	8.49
Aug	.98	1.30	1.79	2.22	2.64	3.07	3.55	4.12	4.86	6.01	7.09
Sep	.53	.79	1.22	1.62	2.03	2.47	2.98	3.59	4.41	5.73	6.99
Oct	1.14	1.39	1.75	2.04	2.32	2.60	2.90	3.25	3.69	4.36	4.97
Nov	.87	1.21	1.75	2.23	2.71	3.21	3.78	4.45	5.34	6.74	8.06
Dec	.94	1.22	1.64	2.00	2.34	2.70	3.09	3.55	4.14	5.06	5.92
Ann	31.30	33.01	35.17	36.78	38.19	39.55	40.94	42.45	44.28	46.89	49.13

\+ 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: 1948-2001
(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	6.5	5.4	2	1	10.0	1982	31	17.9	1978	18	1996	12	8	1996	4.6	2.3	.6	.2	@	11.2	6.1	4.4	1.1
Feb	4.2	2.8	1	#	8.5	1985	10	12.9	1984	12	1993	28	8	1978	2.4	1.2	.3	.1	.0	6.2	3.6	3.0	.7
Mar	2.1	1.7	#	#	5.0	1999	9	8.1	1975	8	1984	1	2	1984	1.4	.6	.3	@	.0	1.9	.7	.2	.0
Apr	.2	.0	#	0	1.5	1982	8	3.8	1982	1+	1994	6	#+	1994	.2	.1	.0	.0	.0	.2	.0	.0	.0
May	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.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	.1	.0	0	0	1.9	1993	30	2.1	1993	0	0	0	0	0	.1	@	.0	.0	.0	.0	.0	.0	.0
Nov	.6	.0	#	0	4.3	1997	13	4.8	1997	4	1975	26	1	1996	.6	.2	.1	.0	.0	.4	.1	.0	.0
Dec	4.1	1.5	1	#	11.0	1977	5	21.7	1977	12	1973	22	5	2000	2.2	1.0	.4	.2	@	3.5	2.2	1.8	.2
Ann	17.8	11.4	N/A	N/A	11.0	Dec 1977	5	21.7	Dec 1977	18	Jan 1996	12	8+	Jan 1996	11.5	5.4	1.7	.5	@	23.4	12.7	9.4	2.0

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

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

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	171	165	161	158	154	151	148	144	138
32	201	192	186	180	176	171	165	159	151
28	224	216	210	205	201	196	191	186	178
24	248	240	235	231	227	223	218	213	206
20	279	269	262	256	250	244	238	231	221
16	300	292	287	282	277	273	268	262	255

***** 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	1220	975	758	426	193	21	4	17	78	366	685	1064	5807
60	1065	835	603	287	110	5	0	3	26	239	536	909	4618
57	972	752	519	213	73	2	0	0	10	176	449	816	3982
55	910	701	461	169	53	1	0	0	5	140	394	760	3594
50	767	571	327	82	21	0	0	0	1	70	265	615	2719
32	309	197	48	0	0	0	0	0	0	0	21	206	781

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	112	146	313	568	912	1151	1300	1238	990	670	326	165	7891
55	0	5	13	47	252	461	587	525	306	97	9	6	2308
57	0	1	9	31	210	402	525	463	251	71	4	0	1967
60	0	0	0	14	155	315	432	372	176	42	1	0	1507
65	0	0	0	3	82	182	282	232	78	13	0	0	872
70	0	0	0	0	35	79	147	122	23	3	0	0	409

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	20	41	145	344	671	919	1062	996	758	433	161	35	20	61	206	550	1221	2140	3202	4198	4956	5389	5550	5585
45	4	18	84	226	516	769	907	841	608	294	89	17	4	22	106	332	848	1617	2524	3365	3973	4267	4356	4373
50	1	6	46	134	372	619	752	686	461	181	45	6	1	7	53	187	559	1178	1930	2616	3077	3258	3303	3309
55	0	1	22	67	241	470	597	531	319	95	18	1	0	1	23	90	331	801	1398	1929	2248	2343	2361	2362
60	0	0	6	31	138	325	442	376	195	45	4	0	0	0	6	37	175	500	942	1318	1513	1558	1562	1562
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	4	21	86	202	410	613	731	675	481	251	83	19	4	25	111	313	723	1336	2067	2742	3223	3474	3557	3576

(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