

Climatology of the United States

No. 20

National Climatic Data Center
Federal Building
151 Patton Avenue
Asheville, North Carolina 28801
www.ncdc.noaa.gov

Station: ELWOOD WASTEWATER PLANT, IN

1971-2000

COOP ID: 122638

Climate Division: IN 5

NWS Call Sign:

Elevation: 840 Feet

Lat: 40°16N

Lon: 85°51W

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	32.4	15.4	23.9	69	1950	26	35.2	1998	-24+	1985	20	9.1	1977	1274	0	.0	.0	2.6	14.4	28.6	4.9
Feb	37.6	19.1	28.4	74+	1999	12	38.4+	1998	-23	1982	10	13.2	1978	1027	0	.0	.0	4.8	10.0	24.8	3.4
Mar	48.5	28.1	38.3	81+	1986	31	44.9	1973	-10	1960	6	28.1	1984	829	0	.0	.0	13.4	2.9	21.6	.3
Apr	60.9	37.6	49.3	88	1977	19	56.8	1985	12+	1982	6	44.0	1982	475	2	.0	.0	24.8	.2	9.6	.0
May	72.1	48.6	60.4	92+	1952	6	67.4	1977	26+	1963	1	55.3	1997	210	65	.0	.3	30.6	.0	.8	.0
Jun	81.1	58.0	69.6	102	1988	26	73.3	1971	36	1956	2	64.3	1972	30	166	@	3.3	30.0	.0	.0	.0
Jul	84.9	61.8	73.4	103	1954	15	78.3	1999	44+	1963	10	70.0	1971	4	262	.1	6.7	31.0	.0	.0	.0
Aug	82.8	59.2	71.0	99+	1983	21	78.1	1995	37+	1965	29	65.2	1992	22	208	.0	4.2	31.0	.0	.0	.0
Sep	77.0	51.7	64.4	101+	1953	3	69.2	1998	28+	1949	29	59.3	1974	91	71	.0	1.8	30.0	.0	.2	.0
Oct	65.0	40.0	52.5	91+	1953	3	61.0	1971	17	1965	30	45.7	1987	400	13	.0	.0	29.1	.0	7.8	.0
Nov	50.7	31.7	41.2	83	1950	1	46.8	1999	-5	1958	30	33.4	1976	715	0	.0	.0	15.1	1.1	17.8	.0
Dec	37.7	21.2	29.5	72	1998	6	38.0	1982	-20	1989	22	17.1	1989	1102	0	.0	.0	4.7	8.9	26.5	1.8
Ann	60.9	39.4	50.2	103	Jul 1954	15	78.3	Jul 1999	-24+	Jan 1985	20	9.1	Jan 1977	6179	787	.1	16.3	247.1	37.5	137.7	10.4

+ 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/normal/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

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: ELWOOD WASTEWATER PLANT, IN

COOP ID: 122638

Climate Division: IN 5

NWS Call Sign:

Elevation: 840 Feet Lat: 40°16N

Lon: 85°51W

Precipitation (inches)																								
	Precipitation Totals									Mean Number of Days (3)				Precipitation Probabilities (1) Probability that the monthly/annual precipitation will be equal to or less than the indicated amount										
	Means/ Medians(1)		Extremes							Daily Precipitation				Monthly/Annual Precipitation vs Probability Levels These values were determined from the incomplete gamma distribution										
Month	Mean	Med-ian	Highest Daily(2)	Year	Day	Highest Monthly(1)	Year	Lowest Monthly(1)	Year	>= 0.01	>= 0.10	>= 0.50	>= 1.00	.05	.10	.20	.30	.40	.50	.60	.70	.80	.90	.95
Jan	2.28	2.13	2.57	1950	4	5.14	1999	.52	1981	10.7	5.6	1.3	.3	.55	.76	1.09	1.39	1.68	1.99	2.34	2.76	3.30	4.16	4.97
Feb	1.91	1.78	2.47	1997	27	4.65	1985	.42	1978	8.5	4.4	1.3	.3	.46	.63	.91	1.16	1.41	1.67	1.96	2.31	2.77	3.49	4.17
Mar	2.98	2.65	2.33	1953	4	6.02	1982	.63	1981	11.3	6.8	2.0	.5	.98	1.26	1.68	2.03	2.37	2.72	3.11	3.56	4.14	5.04	5.87
Apr	3.62	3.79	2.60	1988	7	7.12	1972	1.45	1997	12.4	8.0	2.4	.7	1.53	1.86	2.32	2.70	3.05	3.41	3.79	4.24	4.80	5.65	6.42
May	4.08	4.00	2.80	1989	25	7.34	1989	.87	1988	11.9	7.9	2.7	1.0	1.83	2.19	2.70	3.10	3.49	3.87	4.28	4.75	5.35	6.24	7.06
Jun	4.39	4.28	5.10	1957	28	11.71	1998	.63	1988	10.8	7.5	3.0	1.0	1.32	1.74	2.36	2.90	3.42	3.96	4.56	5.26	6.17	7.59	8.90
Jul	4.38	3.83	4.06	1976	12	11.76	1992	1.37	1974	9.3	6.5	2.8	1.4	1.32	1.74	2.36	2.89	3.41	3.95	4.55	5.25	6.15	7.56	8.87
Aug	3.87	3.96	3.97	1980	7	7.60	1977	.34	1996	8.3	5.9	2.5	1.1	.89	1.25	1.82	2.33	2.83	3.37	3.97	4.69	5.64	7.14	8.55
Sep	3.20	2.61	5.01	1989	1	11.05	1989	.34	1978	8.3	5.6	2.0	.9	.37	.62	1.07	1.52	1.99	2.52	3.14	3.91	4.96	6.68	8.36
Oct	2.60	2.54	2.80	1977	1	5.23	1983	.66	1982	9.3	5.2	1.8	.3	.90	1.14	1.50	1.80	2.09	2.39	2.72	3.10	3.58	4.34	5.03
Nov	3.60	3.15	3.50	1983	11	9.73	1985	.13	1976	11.3	6.6	2.4	1.0	.62	.93	1.46	1.95	2.46	3.00	3.63	4.39	5.40	7.03	8.59
Dec	2.99	2.78	3.50	1967	3	6.49	1990	.40	1976	11.5	6.9	1.9	.5	.76	1.04	1.48	1.86	2.24	2.64	3.09	3.61	4.30	5.39	6.41
Ann	39.90	39.04	5.10	Jun 1957	28	11.76	Jul 1992	.13	Nov 1976	123.6	76.9	26.1	9.0	28.46	30.68	33.52	35.67	37.58	39.43	41.33	43.44	45.99	49.70	52.90

+ 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

Complete documentation available from:
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

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: ELWOOD WASTEWATER PLANT, IN

COOP ID: 122638

Climate Division: IN 5

NWS Call Sign:

Elevation: 840 Feet

Lat: 40°16N

Lon: 85°51W

Snow (inches)																							
Snow Totals															Mean Number of Days (1)								
Means/Medians (1)					Extremes (2)										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	-99.9	1	0	2.5	1995	7	2.5	1995	20	1978	29	7	1978	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
Feb	1.7	-99.9	#	0	5.8	1974	25	8.3	1974	7	1993	27	3+	1993	-9.9	-9.9	-9.9	-9.9	-9.9	1.6	1.3	.8	.0
Mar	.4	.0	#	0	4.0	1993	5	4.0	1993	10	1984	1	1+	1993	.4	.2	.1	.0	.0	.4	.4	.2	.0
Apr	#	.0	0	0	#	1983	19	#+	1983	4	1982	9	2	1982	.0	.0	.0	.0	.0	.0	.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	#	.0	0	0	#	1993	30	#+	1993	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	.1	.0	#	0	1.0	1974	15	1.0	1974	#+	1997	14	#+	1997	.1	.1	.0	.0	.0	.0	.0	.0	.0
Dec	6.7	1.0	#	0	10.0	1973	20	27.5	1973	7	1989	26	5	1974	1.8	1.4	.4	.2	.1	1.0	.0	.0	.0
Ann	9.5	-9.9	N/A	N/A	10.0	Dec 1973	20	27.5	Dec 1973	20	Jan 1978	29	7	Jan 1978	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9

+ 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

Complete documentation available from:

www.ncdc.noaa.gov/oa/climate/normal/usnormals.html

Climatography of the United States

No. 20 1971-2000

Station: ELWOOD WASTEWATER PLANT, IN

COOP ID: 122638

Climate Division: IN 5

NWS Call Sign:

Elevation: 840 Feet

Lat: 40° 16N

Lon: 85° 51W

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	5/02	4/29	4/24
32	5/12	5/07	5/03	4/30	4/27	4/23	4/20	4/16	4/11
28	4/29	4/24	4/20	4/17	4/14	4/12	4/08	4/05	3/31
24	4/18	4/14	4/11	4/09	4/06	4/04	4/01	3/29	3/25
20	4/08	4/02	3/29	3/25	3/22	3/18	3/15	3/11	3/05
16	3/30	3/23	3/19	3/15	3/11	3/07	3/03	2/26	2/20
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	9/25	9/28	9/30	10/02	10/04	10/07	10/11
32	9/27	10/01	10/04	10/07	10/09	10/12	10/14	10/18	10/22
28	10/07	10/13	10/17	10/20	10/23	10/26	10/30	11/03	11/08
24	10/19	10/24	10/28	10/31	11/03	11/06	11/09	11/13	11/18
20	10/30	11/06	11/11	11/16	11/20	11/24	11/28	12/04	12/11
16	11/14	11/21	11/26	11/30	12/04	12/08	12/12	12/17	12/24
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	161	155	151	147	144	141	137	133	127
32	184	177	173	169	165	161	157	153	146
28	215	207	201	196	191	186	181	176	167
24	229	222	218	214	210	206	202	198	191
20	270	261	254	248	242	237	231	224	214
16	295	286	279	273	268	262	256	249	240

* 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

Complete documentation available from:

www.ncdc.noaa.gov/oa/climate/normal/usnormals.html

**Climatography
of the United States
No. 20
1971-2000**

Station: ELWOOD WASTEWATER PLANT, IN

COOP ID: 122638

Climate Division: IN 5

NWS Call Sign:

Elevation: 840 Feet Lat: 40°16N Lon: 85°51W

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	1274	1027	829	475	210	30	4	22	91	400	715	1102	6179
60	1119	887	674	333	121	7	0	4	33	271	566	947	4962
57	1026	803	582	256	81	3	0	0	15	205	477	854	4302
55	964	751	527	209	59	1	0	0	8	167	420	793	3899
50	814	620	385	112	23	0	0	0	2	90	287	651	2984
32	338	231	66	1	0	0	0	0	0	1	24	226	887

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	87	128	261	518	878	1126	1281	1210	970	637	299	147	7542
55	0	4	8	36	224	438	568	497	288	90	5	2	2160
57	0	0	1	23	184	379	506	435	235	66	2	0	1831
60	0	0	0	10	132	294	413	346	163	39	1	0	1398
65	0	0	0	2	65	166	262	208	71	13	0	0	787
70	0	0	0	0	26	72	129	106	20	3	0	0	356

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	8	30	114	308	640	897	1043	967	740	403	144	29	8	38	152	460	1100	1997	3040	4007	4747	5150	5294	5323
45	0	9	64	198	487	747	888	812	590	270	80	11	0	9	73	271	758	1505	2393	3205	3795	4065	4145	4156
50	0	2	31	113	342	597	733	657	443	165	39	3	0	2	33	146	488	1085	1818	2475	2918	3083	3122	3125
55	0	0	10	58	215	449	578	502	302	85	16	0	0	0	10	68	283	732	1310	1812	2114	2199	2215	2215
60	0	0	2	22	116	307	424	352	180	41	2	0	0	0	2	24	140	447	871	1223	1403	1444	1446	1446
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	2	16	81	197	394	588	703	649	477	261	88	19	2	18	99	296	690	1278	1981	2630	3107	3368	3456	3475

(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.
Complete documentation for the 1971-2000 Normals is available on the internet from:
www.ncdc.noaa.gov/oa/climate/normal/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 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/normal.html
U.S. Climate Normals 1971-2000-Products Clim20, www.ncdc.noaa.gov/oa/climate/normal/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