

Climatology of the United States No. 20

Station: FRANKFORT DISPOSAL PLANT, IN

1971-2000

COOP ID: 123082

Climate Division: IN 5

NWS Call Sign:

Elevation: 835 Feet

Lat: 40° 18N

Lon: 86° 30W

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	32.3	16.3	24.3	70	1950	25	35.9	1990	-25	1985	20	8.6	1977	1263	0	.0	.0	2.3	14.8	28.0	4.5
Feb	37.4	20.2	28.8	73+	1999	11	38.8	1998	-22	1979	5	12.4	1978	1013	0	.0	.0	4.7	9.6	23.8	3.0
Mar	48.8	29.8	39.3	83	1981	31	46.7	1973	-13+	1960	6	29.5	1984	797	0	.0	.0	13.9	2.8	19.7	.2
Apr	61.1	39.0	50.1	89	1977	18	55.5	1985	14	1979	6	45.7	1975	450	1	.0	.0	25.1	.0	7.9	.0
May	72.2	49.7	61.0	94	1964	19	68.4	1977	18	1978	2	55.5	1997	197	71	.0	.3	30.9	.0	.6	.0
Jun	81.1	59.3	70.2	101	1988	25	74.8	1971	36	1992	22	65.5	1972	23	179	@	3.7	30.0	.0	.0	.0
Jul	84.3	63.0	73.7	105	1980	15	77.9	1980	44+	1963	10	70.5	1996	4	271	.1	6.3	31.0	.0	.0	.0
Aug	82.2	60.9	71.6	100	1948	26	78.5	1995	35	1965	29	66.1	1992	19	221	.0	3.4	31.0	.0	.0	.0
Sep	76.3	53.4	64.9	99	1953	2	69.2+	1998	28	1995	23	60.3	1993	86	80	.0	1.2	30.0	.0	.1	.0
Oct	64.1	42.3	53.2	89	1971	1	61.1	1971	17+	1948	18	46.5	1988	378	12	.0	.0	28.5	.0	5.0	.0
Nov	49.7	32.7	41.2	78+	1961	2	46.2	1994	-4+	1950	24	33.0	1976	714	0	.0	.0	14.5	1.3	15.6	.0
Dec	37.1	22.1	29.6	72+	1982	2	38.7	1982	-26	1983	24	17.1	1989	1097	0	.0	.0	4.4	9.5	26.0	1.9
Ann	60.6	40.7	50.7	105	Jul 1980	15	78.5	Aug 1995	-26	Dec 1983	24	8.6	Jan 1977	6041	835	.1	14.9	246.3	38.0	126.7	9.6

+ 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/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

020-A

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: FRANKFORT DISPOSAL PLANT, IN

COOP ID: 123082

Climate Division: IN 5

NWS Call Sign:

Elevation: 835 Feet Lat: 40°18N

Lon: 86°30W

Precipitation (inches)

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	2.09	1.78	2.88	1950	3	5.36	1999	.27	1986	11.4	6.0	1.1	.2	.52	.71	1.02	1.29	1.55	1.83	2.15	2.52	3.01	3.78	4.51
Feb	2.03	1.98	2.01	1964	13	5.99	1990	.28	1978	9.4	4.8	1.0	.3	.39	.57	.87	1.14	1.42	1.72	2.06	2.47	3.01	3.88	4.71
Mar	3.15	3.00	2.80	1995	7	6.40	1998	.77	1994	11.7	7.3	2.0	.5	.94	1.24	1.69	2.07	2.45	2.84	3.27	3.77	4.43	5.45	6.40
Apr	3.57	3.69	3.16	1964	20	7.37	1972	.83	1971	12.9	7.6	2.5	.6	1.21	1.55	2.04	2.46	2.86	3.27	3.72	4.25	4.93	5.97	6.94
May	4.10	4.22	4.02	1971	24	7.41	1974	.89	1988	11.7	7.7	2.8	1.0	1.43	1.82	2.38	2.85	3.31	3.77	4.28	4.87	5.63	6.80	7.87
Jun	4.51	4.44	5.10	1978	25	10.61	1998	.34	1991	10.3	7.0	2.9	1.2	1.03	1.45	2.11	2.70	3.30	3.92	4.63	5.47	6.57	8.33	9.99
Jul	4.05	3.57	3.52	1979	4	15.48	1992	.74	1974	9.2	6.4	2.8	1.2	1.03	1.41	2.00	2.52	3.03	3.57	4.18	4.89	5.82	7.30	8.68
Aug	3.98	3.31	4.25	1989	28	9.08	1977	.15	1996	9.6	6.2	2.9	1.2	.79	1.15	1.74	2.27	2.81	3.39	4.05	4.84	5.88	7.56	9.15
Sep	3.00	2.44	3.92	1950	1	9.48	1972	.47	1979	8.2	5.2	2.3	.6	.51	.77	1.21	1.62	2.04	2.50	3.02	3.66	4.51	5.88	7.19
Oct	2.86	2.52	3.30	1991	25	6.39	1991	.99	1987	9.3	5.9	2.2	.5	1.16	1.42	1.80	2.10	2.39	2.68	3.00	3.37	3.83	4.54	5.18
Nov	3.35	3.10	3.15	1985	19	10.30	1985	.45	1976	10.4	6.4	2.2	.8	.72	1.02	1.52	1.96	2.41	2.88	3.42	4.07	4.92	6.27	7.56
Dec	2.91	2.76	3.48	1967	21	8.37	1990	.90	1986	11.7	7.2	1.5	.4	.81	1.09	1.51	1.87	2.23	2.60	3.02	3.50	4.14	5.13	6.06
Ann	39.60	39.98	5.10	Jun 1978	25	15.48	Jul 1992	.15	Aug 1996	125.8	77.7	26.2	8.5	29.03	31.10	33.73	35.72	37.48	39.18	40.93	42.86	45.19	48.56	51.46

+ 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

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Climate Division: IN 5

NWS Call Sign:

Elevation: 835 Feet

Lat: 40° 18N

Lon: 86° 30W

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	8.2	6.7	2	1	10.5	1999	2	26.0	1978	19	1978	31	9	1977	5.5	3.2	1.0	.3	@	12.4	7.0	4.4	1.3
Feb	6.1	4.9	2	1	8.0	1984	27	19.4	1993	19	1978	1	10	1978	3.9	2.1	.7	.3	.0	8.7	4.9	3.1	1.0
Mar	3.1	2.0	#	#	7.0	1988	3	13.2	1984	14	1984	13	5	1984	2.1	1.0	.4	.1	.0	3.2	1.3	.8	.2
Apr	.7	.0	#	0	5.0	1982	5	7.0	1982	7	1982	9	1	1982	.3	.2	.1	.1	.0	.3	.2	.1	.0
May	#	.0	0	0	#	1989	6	#	1989	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	.3	.0	#	0	6.0	1989	19	9.0	1989	7	1989	19	#	1989	.1	.1	.1	@	.0	.0	.0	.0	.0
Nov	1.0	.0	#	0	4.0	1975	26	5.0	1974	4	1975	26	#+	2000	.8	.4	.1	.0	.0	.6	.1	.0	.0
Dec	5.5	5.6	1	1	15.5	1973	19	16.5	1977	16	1973	21	6	1973	3.8	2.3	.7	.2	@	7.0	3.2	1.5	.4
Ann	24.9	19.2	N/A	N/A	15.5	Dec 1973	19	26.0	Jan 1978	19+	Feb 1978	1	10	Feb 1978	16.5	9.3	3.1	1.0	@	32.2	16.7	9.9	2.9

+ 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:

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Lon: 86° 30W

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	5/26	5/20	5/16	5/12	5/08	5/05	5/01	4/26	4/20
32	5/13	5/08	5/03	4/30	4/27	4/23	4/20	4/15	4/10
28	4/29	4/24	4/20	4/17	4/14	4/11	4/07	4/03	3/29
24	4/19	4/13	4/09	4/06	4/03	3/30	3/27	3/23	3/18
20	4/10	4/04	3/31	3/27	3/23	3/20	3/16	3/12	3/06
16	4/02	3/27	3/22	3/18	3/14	3/10	3/06	3/01	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	9/24	9/27	9/29	10/01	10/03	10/05	10/07	10/10	10/13
32	9/27	10/02	10/05	10/08	10/11	10/14	10/16	10/20	10/24
28	10/08	10/13	10/17	10/20	10/23	10/26	10/29	11/01	11/06
24	10/22	10/27	11/01	11/04	11/07	11/11	11/14	11/18	11/24
20	11/03	11/09	11/13	11/17	11/20	11/24	11/28	12/02	12/08
16	11/11	11/18	11/23	11/27	12/01	12/05	12/10	12/15	12/22
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	168	161	156	151	147	143	139	134	127
32	187	180	175	171	167	163	158	153	146
28	214	206	201	196	191	187	182	176	168
24	240	232	227	222	218	214	209	204	197
20	263	256	250	246	241	237	232	227	219
16	286	278	272	266	261	257	251	245	237

* 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:

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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	1263	1013	797	450	197	23	4	19	86	378	714	1097	6041
60	1108	873	642	306	111	5	0	4	30	250	564	942	4835
57	1015	789	555	228	72	2	0	0	13	185	476	849	4184
55	953	736	496	181	52	1	0	0	7	147	418	791	3782
50	808	606	357	87	19	0	0	0	1	74	286	647	2885
32	336	219	57	0	0	0	0	0	0	0	25	227	864

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	96	130	283	542	898	1145	1290	1225	984	657	301	154	7705
55	0	3	9	33	236	456	577	512	301	91	5	5	2228
57	0	0	6	20	195	397	515	450	248	66	2	0	1899
60	0	0	0	8	141	310	422	361	175	38	0	0	1455
65	0	0	0	1	71	179	271	221	80	12	0	0	835
70	0	0	0	0	29	78	137	114	25	2	0	0	385

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	16	36	133	325	661	915	1056	986	755	427	148	33	16	52	185	510	1171	2086	3142	4128	4883	5310	5458	5491
45	3	12	73	210	509	765	901	831	605	289	84	12	3	15	88	298	807	1572	2473	3304	3909	4198	4282	4294
50	0	3	36	119	357	615	746	676	458	178	39	5	0	3	39	158	515	1130	1876	2552	3010	3188	3227	3232
55	0	0	14	58	231	466	591	521	318	93	13	0	0	0	14	72	303	769	1360	1881	2199	2292	2305	2305
60	0	0	3	22	127	320	437	367	195	44	3	0	0	0	3	25	152	472	909	1276	1471	1515	1518	1518
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	2	18	82	197	408	607	719	668	482	252	80	16	2	20	102	299	707	1314	2033	2701	3183	3435	3515	3531

(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/normal/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.

- | | |
|---|---|
| <ol style="list-style-type: none">a. Temperature/ Precipitation Tables<ol style="list-style-type: none">1. 1971-2000 Monthly Normals2. Cooperative Summary of the Day3. National Weather Service station records4. 1971-2000 serially complete daily datab. Degree Day Table<ol style="list-style-type: none">1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data | <ol style="list-style-type: none">c. Snow Tables<ol style="list-style-type: none">1. Snow Climatology2. Cooperative Summary of the Dayd. 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