

LATITUDE $41^{\circ}01'N$
 LONGITUDE $80^{\circ}46'W$
 ELEV. (GROUND) 1140

CLIMATOLOGICAL SUMMARY

STATION: CANFIELD, OHIO

MEANS AND EXTREMES FOR PERIOD 1917-1966

MONTH	TEMPERATURE (° F)											PRECIPITATION TOTALS (INCHES)											MONTH								
	MEANS				EXTREMES				MEAN DEGREE DAYS**	MEAN NUMBER OF DAYS				PRECIPITATION					SNOW, SLEET		MEAN NUMBER OF DAYS										
	DAILY MAXIMUM	DAILY MINIMUM	MONTHLY	RECORD HIGHEST	YEAR	DAY	RECORD LOWEST	YEAR		DAY	90° AND ABOVE	32° AND BELOW	32° AND BELOW	0° AND BELOW	MEAN	GREATEST MONTHLY	YEAR	GREATEST DAILY	YEAR	DAY	MEAN	MAXIMUM MONTHLY		YEAR	GREATEST DAILY	YEAR	DAY	.01 or MORE	.10 or MORE	.50 or MORE	1.00 or MORE
JAN	35.4	18.7	27.0	72	50	25	-21	65	17	1172.4	0	12	27	2	2.38	7.65	37	2.60	59	21	8.6	25.0	18	11.0	66	23	12	6	1.4	.2	JAN
FEB	37.6	19.7	28.6	71	32	11	-24	63	26	1023.1	0	9	25	2	1.89	5.09	56	2.50	59	10	6.6	17.1	63	7.0	51	1	10	5	.8	.1	FEB
MAR	47.3	26.8	37.0	81	38	22	-11	48	12	86.4	0	3	22	0	2.89	5.82	45	1.84	39	30	6.4	21.1	60	10.0	62	6	12	7	1.8	.2	MAR
APR	59.3	35.9	47.6	89	25	24	6	64	1	523.0	0	0	12	0	3.13	6.31	29	1.60	20	20	1.7	14.5	61	6.0	38	6	12	8	2.0	.3	APR
MAY	70.5	45.5	58.0	94	64	19	22	66	10	245.0	0	0	2	0	3.58	10.53	46	3.50	53	22	.0	1.0	47	1.0	47	8	11	7	2.5	.6	MAY
JUNE	79.4	55.0	67.2	97	52	26	30	66	2	58.0	0	0	0	0	3.69	7.05	28	2.75	20	17	.0	.0	17	.0	0	0	9	7	2.4	.8	JUNE
JULY	83.2	58.5	70.8	104	36	14	35	65	20	16.0	0	0	0	0	3.71	11.84	58	3.45	25	10	.0	.0	17	.0	0	0	9	7	2.6	.9	JULY
AUG	81.5	57.0	69.2	103	18	6	34	23	22	29.0	0	0	0	0	2.95	6.77	34	2.80	34	9	.0	.0	17	.0	0	0	8	5	1.9	.6	AUG
SEPT	75.9	50.8	65.5	99	53	2	24	23	15	125.0	0	0	0	0	2.65	7.76	24	2.10	39	27	.0	.0	17	.0	0	0	8	5	1.7	.5	SEPT
OCT	64.0	40.5	52.5	90	27	1	16	65	29	400.0	0	0	0	0	2.54	8.44	54	2.62	54	15	.2	6.5	25	3.0	25	28	9	6	1.4	.4	OCT
NOV	48.4	31.7	40.5	79	61	3	-1	29	30	731.0	0	1	16	0	2.53	6.23	27	2.05	21	1	3.5	27.0	50	14.0	50	25	10	7	1.2	.2	NOV
DEC	37.8	22.2	30.0	68	53	6	-15	17	30	1080.0	0	10	25	1	2.16	6.00	27	1.90	27	13	6.7	25.4	60	8.0	44	12	11	6	1.1	.2	DEC
YEAR	60.1	38.5	49.2	104	36	14	-24	63	26	626.7	10	35	135	5	34.10	11.84	58	3.50	53	22	33.7	27.0	50	14.0	50	25	121	77	21.0	5.0	YEAR

** BASE 65° F *Also on earlier dates, months, or years

NARRATIVE CLIMATOLOGICAL SUMMARY

Canfield is located near the center of Mahoning County in Ohio's Northeast Hills. Terrain within Mahoning County is hilly; the elevation of the earth's surface above sea level varies from about 900 to 1320 feet. A map of the physiographic regions of Ohio shows Mahoning County to be a part of Ohio's Glaciated Plateau. The topography of this area is more subdued than that of the Nonglaciated Plateau lying to the south. Manufacturing is the prevailing activity of the people of the Glaciated Plateau although agriculture of a specialized nature is important.

The climate of Canfield is classified as continental. Such a climate is marked by large annual, daily, and day to day ranges of temperature. In Mahoning County, summers are moderately warm and humid with occasional days when temperatures exceed 90°F. Winters are reasonably cold and cloudy with an average of 5 days with sub-zero temperatures. Weather changes occur every few days from the passing of cold or warm fronts and their associated centers of high and low pressure.

Normal mean temperature for the year is nearly 2 degrees below the average for Ohio's Northeast Hills. On nights with clear skies and light winds there is often a large variation in observed surface temperatures within Mahoning County. This is especially true in the vicinity of hills. On such nights, the air near the tops of hills becomes cooler and denser than air at the same heights over the valleys. These air temperature and density differences cause the cool air to drain down the slopes and into the valleys. This drainage often results in large differences in surface temperature between the valley floors and the tops of hills. The daily range in temperature is usually greatest in late summer and least in winter. The extreme temperature range (record high minus record low) during the period 1917-1967 is 128 degrees. Annual extremes in temperature normally occur soon after June 21 and December 22. Maximum temperatures below freezing occur most often during December, January, and February. Coldest month of record is January 1918. In that month, temperatures did not exceed 32°F on 25 days and sub-zero lows were recorded on 10 days. Temperatures of 100°F or more have never been recorded earlier than July 9 nor later than August 7. Warmest month of record is July 1921. In that month, daily highs exceeded 89°F on 8 days.

Heating degree days as shown in the above table are a measure of the departure of the mean daily temperature from 65°F. When the average daily temperature is above 65°F, the degree day value for that day is zero. The daily totals are accumulated from July 1 through June 30. At any point during the year, the accumulated degree days can be used as an index of past temperature effect upon power consumption and fuel consumption for heating of homes and businesses.

Taking the number of days between the last freezing temperature (32°F) of spring and the first freezing temperature in fall as the crop-growing season, this season averages 142 days in length. The growing season is 163 days or more in 10% of the years, 151 days or more in 30% of the years, less than 133 days in 30% of the years, and less than 121 days in 10% of the years. Temperatures of 32°F or less have been recorded as late as June 6 in Spring and as early as September 12 in Fall.

PROBABILITY OF FREEZES OCCURRING AS LATE IN THE
 SPRING OR AS EARLY IN THE FALL AS DATES SHOWN
 IN THE FOLLOWING TABLE

PERCENT CHANCE OF LATER DATE IN SPRING	TEMPERATURE LEVELS					
	16°	20°	24°	28°	32°	36°
90	MAR 1	MAR 15	MAR 30	APR 11	APR 28	MAY 7
70	MAR 11	MAR 25	APR 9	APR 20	MAY 7	MAY 18
50	MAR 18	APR 1	APR 15	APR 26	MAY 13	MAY 25
30	MAR 25	APR 8	APR 21	MAY 2	MAY 19	JUNE 2
10	APR 3	APR 18	MAY 1	MAY 11	MAY 28	JUNE 12

PERCENT CHANCE OF EARLIER DATE IN FALL						
	NOV 11	NOV 10	OCT 13	SEPT 28	SEPT 17	AUG 31
90	NOV 20	NOV 10	OCT 24	OCT 8	SEPT 26	SEPT 11
50	NOV 26	NOV 16	OCT 31	OCT 15	OCT 3	SEPT 19
70	DEC 2	NOV 23	NOV 7	OCT 22	OCT 9	SEPT 26
90	DEC 11	DEC 2	NOV 18	NOV 1	OCT 18	OCT 8

As is characteristic of continental climates, precipitation in Mahoning County varies widely from year to year. About 60% of the annual precipitation falls during spring and summer. The average annual precipitation of 34.10 inches is nearly 4 inches below the mean for Ohio's Northeast Hills. Annual precipitation is less than 26.44 inches in 10% of the years, less than 31.40 inches in 30% of the years, more than 36.58 inches in 30% of the years, and more than 40.65 inches in 10% of the years. Showers and thundershowers account for most of the rainfall during the growing season. Thunderstorms occur on about 40 days each year. Most of these occur May through August. As is typical of much of Ohio, most precipitation during the winter months comes in the form of rain. Snowfall averages about 34 inches a year although as little as 10 inches fell during the winters of 1931-32 and 1932-1933 and as much as 90 inches fell during the winter of 1960-61. The yearly average snowfall of 34 inches is about 8 inches below the average for this part of Ohio. The deficiency is in part caused by the 5 to 6 PM observation time because snow that fell during the night has often melted, settled or blown away before the evening snow observation time.

Evaporation is greatest during the warm months and is then most critical for agriculture. During the period May through September, potential pan evaporation exceeds the normal rainfall by about 11 inches. During the driest growing season of record, 1944, the pan evaporation exceeded the rainfall by about 18 inches. When evaporation exceeds rainfall for prolonged periods, a drought may occur, however, severe droughts seldom occur in Mahoning County.

Humidity, cloudiness, sunshine, and wind observations are not recorded in Canfield, however, estimates of these variables can be made from observations taken at the Youngstown airport. Relative humidity, the ratio between the amount of moisture in the air and the amount which could be present without condensation at the same temperature and pressure, is an important factor in human and animal comfort and in the growth and development of vegetation. Generally, humidity rises and falls inversely with the daily temperature and is highest in winter and lowest in summer. For the year, relative humidity averages about 82% at 1 AM, 83% at 7 AM, 61% at 1 PM and 71% at 7 PM. Cloudiness is greatest in winter and least in summer. This seasonal variation in cloudiness is most clearly illustrated by the percentage of possible sunshine which is about 70% in July and 30% in December. Heavy fog occurs on about 30 days each year and is evenly distributed throughout the year. Death from smog is unknown. The prevailing wind direction for the year is southwest, averaging 10 mph. Damaging winds occur most often during spring and summer. Such storms are usually associated with migrating thunderstorms.

The tornado, one of the most destructive of all atmospheric storms, is characterized by a violently rotating column of air which is nearly always observable as a "funnel cloud". It frequently leaves great destruction along a narrow path, and is usually accompanied by heavy rain and hail and often by lightning and thunder. Since 1900, 6 such storms have been reported in Mahoning County. During the last decade, Ohio has averaged slightly more than 11 tornadoes a year.

March 1968
 Marvin E. Miller
 ESSA Weather Bureau State Climatologist
 Box 357
 Columbus, Ohio 43216

Date	Location (From Post Office)	Elevation (Ft MSL)	Observer
5/1916 - 12/1916	1.0 mile S	1160	C. W. Galehouse
1/1917 - 9/1918	1.0 mile S	1160	M. O. Buggy
10/1918 - 12/1924	1.0 mile S	1160	M. Newton
1/1925 - 4/1949	1.0 mile S	1160	L. W. Sherman
5/1949 - 6/1962	1.0 mile S	1160	Employees of Ohio Agricultural Research & Development Center
7/1949 - 6/1962	1.0 mile S	1140	Sames as above

AVERAGE TEMPERATURE (°F)

YR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
17	26.9	28.4	31.3	34.6	40.2	65.9	71.6	69.9	59.3	45.5	36.2	30.9	46.2
18	13.3	28.4	41.2	47.1	64.9	66.2	69.3	73.3	56.7	54.0	40.6	37.9	49.4
19	31.3	30.1	37.5	47.2	56.0	70.8	71.3	66.5	62.5	54.1	38.6	22.5	49.2
20	18.9	32.8	37.8	42.5	53.5	64.3	66.6	68.1	62.1	55.3	33.4	31.4	46.9
21	30.8	31.8	46.4	53.5	59.2	69.9	75.6	68.5	69.8	51.6	40.3	29.7	52.3
22	28.6	32.5	39.9	49.2	60.2	67.2	69.6	67.1	65.4	54.4	41.7	29.2	50.1
23	28.8	29.8	34.6	45.8	54.9	67.2	66.7	68.6	61.2	45.6	31.7	28.4	47.6
24	23.2	23.2	31.6	45.7	51.6	64.0	67.1	68.2	58.3	51.6	38.4	27.3	48.2
25	24.4	32.4	38.8	50.9	52.8	70.1	68.9	67.4	67.1	62.6	38.6	27.5	47.0
26	23.4	28.1	30.5	41.8	50.0	63.0	69.3	71.4	65.3	50.8	38.5	26.0	47.0
27	25.1	33.3	40.5	46.6	57.4	61.4	69.2	63.6	65.4	55.0	43.7	30.8	49.3
28	27.9	28.8	34.9	42.2	55.5	63.3	71.5	71.8	59.3	54.8	41.5	33.8	48.8
29	24.8	23.4	43.4	49.6	56.1	64.6	70.2	64.8	64.2	49.6	37.2	29.6	48.1
30	26.6	34.9	34.8	47.4	59.5	66.0	71.5	68.8	66.4	49.7	40.0	28.1	49.5
31	27.7	30.6	32.8	44.9	55.4	66.3	73.7	70.9	67.7	54.7	48.6	37.5	50.9
32	38.8	35.3	32.9	45.4	58.6	67.7	70.4	69.1	64.7	53.7	38.8	31.8	50.4
33	36.6	30.1	36.1	43.0	60.9	70.7	72.4	69.8	66.4	50.6	36.3	32.2	51.1
34	31.3	16.9	32.5	47.2	61.1	73.1	74.5	67.7	66.1	51.5	40.3	28.9	49.6
35	27.8	27.9	43.4	45.0	52.8	64.6	73.7	70.3	61.0	52.3	42.2	34.1	48.8
36	21.5	19.5	39.4	43.7	61.0	67.0	72.6	72.1	68.2	52.4	38.1	34.0	48.8
37	36.7	30.0	31.9	45.4	57.8	67.6	70.9	71.9	60.1	59.1	37.7	26.5	48.7
38	26.8	30.7	42.5	49.8	58.0	65.1	71.7	71.9	63.1	52.8	41.7	30.7	50.8
39	36.0	31.1	38.0	44.4	60.4	69.5	69.6	70.7	66.6	53.9	38.9	33.5	50.5
40	18.4	27.9	31.9	44.0	57.2	67.8	70.7	69.2	59.7	51.6	39.5	35.3	47.6
41	27.2	24.4	29.8	52.8	59.8	67.8	72.5	67.1	66.0	55.8	43.3	36.4	50.2
42	27.8	24.2	39.5	52.8	61.1	68.3	72.6	69.5	62.6	53.1	41.9	26.4	50.0
43	27.0	30.1	36.1	43.0	58.5	71.5	71.5	68.5	60.4	49.6	38.1	28.1	48.6
44	30.8	28.8	34.7	45.4	54.9	70.9	71.8	70.9	62.8	51.5	42.0	25.2	50.0
45	19.3	29.0	48.0	52.2	64.6	65.2	70.6	69.4	65.4	50.6	41.4	24.4	49.2
46	30.0	30.4	48.5	47.0	57.8	66.5	70.3	65.1	64.1	55.9	43.8	33.6	51.1
47	33.2	21.0	30.3	48.4	55.7	65.7	67.9	75.4	65.2	52.8	37.7	30.6	49.6
48	18.3	29.4	40.1	53.0	67.1	66.9	72.3	78.3	68.2	66.7	42.9	34.0	49.6
49	36.9	32.3	35.3	45.3	59.3	72.3	68.2	68.2	69.1	55.5	36.7	24.8	48.7
50	38.0	32.0	32.2	45.1	59.8	67.6	70.7	68.5	61.8	54.5	33.2	30.2	49.4
51	30.0	29.5	37.6	47.1	59.8	67.6	70.7	68.5	61.8	54.5	33.2	30.2	49.4
52	31.3	32.2	36.0	48.8	57.1	71.7	73.8	69.2	63.6	47.6	43.1	33.7	50.7
53	32.2	32.9	40.1	44.6	61.4	69.3	71.2	70.3	66.1	53.9	44.0	34.4	51.6
54	28.8	35.3	35.1	53.7	55.4	69.2	70.4	68.7	65.6	54.7	40.7	30.5	50.7
55	25.2	30.0	39.2	55.1	60.1	64.0	75.5	73.8	65.3	53.0	38.4	28.0	50.7
56	26.4	31.4	35.6	46.5	57.2	66.9	70.4	69.9	59.6	55.2	41.3	37.4	49.8
57	22.8	34.0	38.6	50.9	59.7	69.4	70.9	69.1	63.8	49.2	41.8	34.6	50.4
58	27.0	22.4	35.6	50.5	57.2	63.2	71.8	68.4	63.4	52.9	44.0	21.2	48.1
59	22.5	31.4	36.2	49.9	63.0	68.2	71.5	73.3	66.9	53.4	37.5	33.7	50.7
60	30.0	27.8	32.8	52.4	56.4	65.7	67.2	70.2	66.7	52.0	43.0	35.9	49.3
61	21.5	33.1	39.9	43.4	53.0	63.8	71.3	71.0	69.0	59.9	42.1	30.2	49.9
62	24.4	27.7	35.7	47.9	56.7	69.0	69.0	65.2	69.1	59.7	39.3	23.9	48.5
63	28.2	20.4	39.7	48.9	56.0	64.3	68.6	65.4	59.4	55.9	43.0	21.0	47.1
64	28.3	38.1	42.8	51.3	67.5	71.1	66.1	63.7	68.1	64.1	46.1	31.8	49.6
65	28.3	28.0	32.5	42.5	53.8	66.1	67.3	67.6	65.7	49.9	42.1	35.6	49.2
66	22.2	28.6	39.9	45.6	52.9	66.9	71.5	68.5	59.7	49.4	41.8	29.5	48.0
67	32.1	23.7	37.5	50.0	51.5	69.3	68.3	67.1	59.4	52.4	37.0	34.3	48.6

TOTAL PRECIPITATION (INCHES)

YR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
17	2.33	1.05	1.91	1.97	2.74	5.41	3.63	2.33	2.19	5.74	1.73	1.23	31.32
18	2.41	1.84	2.26	3.43	5.08	1.78	1.93	4.25	3.29	3.26	2.45	1.76	36.74
19	1.70	1.26	1.57	1.93	1.17	1.34	3.20	5.82	2.58	4.78	2.45	1.49	31.76
20	1.62	1.90	1.56	5.87	1.89	1.75	3.02	3.69	1.87	1.48	2.62	1.49	31.76
21	2.78	1.99	3.20	3.72	2.18	3.59	4.89	2.09	4.94	2.69	5.51	1.81	38.49
22	1.35	1.59	4.27	4.71	3.64	2.35	5.82	2.95	4.82	1.65	5.62	2.00	34.73
23	1.91	1.18	2.66	2.56	1.01	1.57	2.55	2.13	2.67	1.32	2.77	5.87	30.76
24	4.39	2.28	2.39	3.26	6.62	5.79	2.01	2.30	7.76	1.31	1.03	5.54	40.68
25	1.49	2.10	2.49	1.07	2.48	4.36	5.16	1.74	4.45	3.90	3.33	1.90	33.47
26	1.56	2.08	1.63	2.23	2.61	4.33	2.73	6.54	6.65	6.13	1.77	2.48	40.74
27	1.54	1.80	2.42	2.43	3.83	3.84	6.43	1.65	2.10	2.37	6.23	6.00	40.64
28	1.52	2.10	2.18	2.37	1.68	7.05	7.19	5.41	1.70	2.37	3.31	1.02	31.02
29	1.66	1.76	3.34	6.31	6.78	3.34	4.58	1.59	3.67	3.04	5.11	1.87	43.05
30	1.17	1.03	2.94	3.44	2.24	3.31	2.58	1.62	3.11	1.99	1.06	1.11	28.60
31	1.17	1.79	1.38	3.58	3.69	4.30	2.23	4.94	2.61	2.08	1.66	3.81	33.26
32	5.25	6.00	2.18	2.88	2.13	4.85	4.90	2.37	1.39	2.87	3.86	2.47	35.25
33	1.71	1.23	2.54	3.39	4.46	1.28	2.02	1.69	2.43	4.91	2.71	3.02	38.32
34	1.83	2.53	1.72	2.66	3.42	3.73	3.89	6.43	2.77	1.87	2.03	1.01	31.59
35	1.49	2.50	3.37	2.14	2.64	2.06	2.49	4.51	2.68	3.28	2.77	1.78	31.74
37	7.65	7.77	2.31	4.28	5.09	4.00	5.67	1.70	1.05	2.79	1.16	2.87	39.34
38	1.95	1.94	5.32	3.12	5.84	5.53	2.85	2.21	3.49	5.56	3.23	1.82	35.86
39	1.78	3.59	4.54	3.29	7.76	6.20	3.93	1.80	4.64	3.62	7.70	1.36	36.21
40	1.02	2.15	3.42	4.13	4.20	3.60	2.45	3.32	1.70	1.54	2.69	2.68	32.90
41	1.26	1.92	1.08	1.65	2.97	4.81	4.56	3.40	1.68	4.27	1.12	1.42	27.16
42	1.37	2.91	3.28	1.95	4.83	3.60	3.81	1.66	2.37	3.79	3.10	5.63	38.30
43	1.41	1.43	2.84	3.27	3.67	2.26	5.38	1.61	1.04	2.86	1.78	1.64	28.19
44	1.93	1.27	2.59	2.80	2.88	1.64	2.08	1.85	1.74	1.58	1.85	2.47	26.20
45	1.46	1.76	5.82	3.54	3.38	2.43	2.68	1.77	7.74	4.52	5.10	1.48	39.61
46	1.69	2.75	1.99	1.11	10.53	2.99	2.09	3.41	1.18	5.11	1.71	1.93	33.82
47	4.51	7.3	1.37	3.87	5.03	4.99	3.59	4.34	2.13	1.94	1.33	1.33	35.21
48	1.53	1.53	2.65	4.73	3.79	5.84	6.02	4.25	1.25	3.26	2.94	3.11	38.02
49	3.75	1.98	1.12	2.69	3.19	3.66	6.33	1.44	1.91	7.73	1.66	1.66	31.72
50	6.38	3.55	2.85	4.08	2.83	4.23	3.15	1.12	2.90	2.40	4.34	1.61	39.26
51	2.35	2.77	3.47	2.67	2.30	4.04	3.28	1.09	3.98	1.85	5.07	3.46	37.23
52	4.14	1.93	2.50	4.03	3.12	3.19	4.98	2.60	3.89	1.15	2.04	2.09	39.66
53	3.61	1.14	3.92	3.55	7.05	1.87	2.10	1.66	1.66	3.34	1.14	1.41	27.45
54	2.13	2.07	4.16	4.30	1.26	3.03	1.42	5.09	2.17	8.41	1.11	2.32	37.47
55	2.71	2.73	4.59	4.14	1.71	2.96	3.10	3.67	1.62	3.87	3.85	1.90	35.47
56	1.33	5.09	3.95	3.75	8.25	5.79	5.37	5.25	2.11	4.9	1.00	2.08	44.46
57	1.52	1.99	1.73	2.01	3.97	5.91	2.99	1.43	3.44	1.59	1.51	2.63	29.72
58	2.57	1.05	1.04	3.50	3.08	4.55	11.84	3.76	3.53	1.18	2.70	1.80	38.20
59	3.2	2.87	1.62	3.18	2.98	3.73							