

LATITUDE 41° 10' N
 LONGITUDE 81° 05' W
 ELEV. (GROUND) 1000 FT.

CLIMATOLOGICAL SUMMARY

STATION: Ravenna, Ohio

MEANS AND EXTREMES FOR PERIOD 1949-1966

MONTH	TEMPERATURE (° F)													PRECIPITATION TOTALS (INCHES)													MONTH				
	MEANS				EXTREMES					MEAN DEGREE DAYS °F	MEAN NUMBER OF DAYS			MEAN	GREATEST MONTHLY	YEAR	GREATEST DAILY	YEAR	DAY	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	MAX.	MIN.	MAXIMUM MONTHLY	YEAR	GREATEST DAILY	YEAR		DAY	MEAN	MAXIMUM MONTHLY	YEAR
JAN	35.9	16.3	27.1	72*	50	26	-19	63	24	1170.	0	12	27	2.76	7.04	30	2.96	59	21	8.9	16.4	57	8.2	66	22	12	6	1.9	.2	JAN	
FEB	39.0	19.3	29.1	68*	61	29	-22	63	27	1008.	0	7	29	2.16	4.19	56	2.71	59	10	8.0	18.4	60	8.5	51	1	11	5	1.1	.3	FEB	
MAR	46.2	25.4	35.9	75*	50	38	-10*	60	11	897.	0	3	24	3.00	5.82	64	2.32	64	4	9.0	22.2	60	8.2	62	6	13	7	1.6	.5	MAR	
APR	60.5	35.9	48.2	80*	60	75	2	58	11	505.	0	0	0	3.61	7.19	64	1.99	57	4	2.0	10.4	57	4.0	61	1	14	9	2.1	.5	APR	
MAY	72.0	45.1	58.5	81	62	78	21	56	10	230.	0	0	0	3.32	6.40	56	1.99	55	2	2	7.5	66	7.5	66	8	11	7	2.2	.5	MAY	
JUNE	80.3	53.7	67.0	95	58	76	32	68	8	51.	0	0	0	3.64	7.04	55	3.84	59	25	.0	10	6	2.5	.7	10	6	2.5	.7	JUNE		
JULY	83.9	57.3	70.6	100	54	84	36	53	25	16.	0	0	0	3.84	8.51	58	2.95	51	28	.0	10	6	2.9	.8	10	6	2.9	.8	JULY		
AUG	82.4	55.3	68.8	98	53	80	37*	53	24	30.	3	1	0	2.85	5.30	56	1.60	49	28	.0	9	5	1.8	.7	9	5	1.8	.7	AUG		
SEPT	76.5	48.5	62.5	99*	54	9	24	57	26	142.	1	0	0	2.48	3.75	59	1.83	59	30	.0	9	5	1.6	.4	9	5	1.6	.4	SEPT		
OCT	66.2	36.8	57.5	89	51	69	13*	65	30	354.	0	0	0	2.48	7.77	54	2.03	54	15	.6	5	0	5.3	5	6	1.3	.4	OCT			
NOV	50.7	31.1	40.5	81	46	63	6	58	30	720.	0	1	17	2.72	5.27	66	3.35	55	16	6.3	23.2	50	9.0	50	25	12	6	1.9	.5	NOV	
DEC	38.0	21.5	29.7	68	56	6	-15	63	31	1089.	0	10	25	1.96	4.21	51	1.25	57	7	10.8	24.0	60	6.0	52	2	12	5	1.0	.1	DEC	
YEAR	60.9	37.5	49.2	100	54	74	-22	63	27	6262.	10	33	140	6	35.02	8.51	58	3.84	59	25	45.7	24.0	60	9.0	50	25	132	73	22.	5.	YEAR

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

NARRATIVE CLIMATOLOGICAL SUMMARY

Ravenna is located near the center of Portage County in northeast Ohio. Terrain within Portage County is rolling to hilly. The elevation of the earth's surface above mean sea level varies from about 910 to 1330 feet. A map of the physiographic regions of Ohio shows this area to be a part of Ohio's Glaciated Plateau. The topography of this area is more subdued than that of the non-glaciated 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 Portage County is classified as continental. Such a climate is a characteristic of a land mass the size of North America and is marked by large annual, daily, and day to day ranges in temperatures. Northerly winds blowing off Lake Erie do little toward modifying surface temperatures within Portage County but such winds do often bring snowstorms of varying intensity during the colder months. In this area, summers are moderately warm and humid with about 10 days when temperatures exceed 89° F. Winters are reasonably cold and cloudy with an average of 6 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 pressures.

Normal mean temperature for the year in the Ravenna area is 1 degree below the average for northeast Ohio. On nights with clear skies and light winds there is often a large variation in observed surface temperatures within Portage 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 valleys. This drainage often results in large differences in surface temperatures between the valley floors and the tops of hills. The daily range in temperature is usually greatest in late summer and early fall and least in winter. Annual extremes in temperature normally occur soon after June 21 and December 22. The highest temperature during the year is equal to or greater than 89° F in 9 of 10 years, 93° F in 5 of 10 years, and 98° F in 1 of 10 years. Lowest temperature during the year is equal to or less than -1° F in 9 of 10 years, -10° F in 5 of 10 years, and -19° F in 1 of 10 years.

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 133 days in the Ravenna area. The growing season is longer than 154 days in 10% of the years and shorter than 112 days in 10% of the years. Similar information from the Ravenna area data due to variations in topography within the country.

Heating degree days (mean degree days) as shown in the above table are a measure of the departure of the average 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.

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 9	MAR 21	APR 3	APR 9	APR 28	MAY 14	
70	MAR 16	MAR 25	APR 12	APR 17	MAY 7	MAY 23	
50	MAR 24	APR 2	APR 15	APR 27	MAY 14	MAY 29	
30	MAR 30	APR 7	APR 24	MAY 5	MAY 21	JUNE 3	
10	APR 8	APR 15	MAY 5	MAY 16	MAY 30	JUNE 12	

PERCENT CHANCE OF EARLIER DATE IN FALL							
10	NOV 9	OCT 24	OCT 8	SEPT 26	SEPT 12	AUG 25	
30	NOV 17	NOV 1	OCT 16	OCT 4	SEPT 20	SEPT 4	
50	NOV 24	NOV 8	OCT 25	OCT 11	SEPT 28	SEPT 12	
70	NOV 30	NOV 14	NOV 1	OCT 17	SEPT 30	SEPT 19	
90	DEC 8	NOV 23	NOV 12	OCT 25	OCT 7	SEPT 30	

As is characteristic of continental climates, precipitation in the Ravenna area varies widely from year to year, however, it is normally abundant and well distributed throughout the year with winter being the driest season. Showers and thundershowers account for most of the rainfall during the growing season. Thunderstorms occur on about 35 days each year and are most frequent from April through August. Heavy rains of 1.9, 2.7, 3.3, 3.9, 4.4, and 4.9 inches in 24-hours can be expected to occur at least once every 2, 5, 10, 25, 50 and 100 years, respectively. There is great variation in mean annual snowfall amounts within Portage County. These amounts decrease southeastward across the county being about 70 inches in the extreme northwest and 37 inches over the extreme southeast. During any year, snowfall may fluctuate widely from the annual means.

Evaporation is greatest during the warm months and is then most critical for agriculture. When evaporation greatly exceeds precipitation for prolonged periods, a drought may occur. During the period 1929-1968, extended periods of moderate to extreme drought in northeast Ohio as determined from the Palmer Drought Severity Index have occurred during the 1930-1936, 1953, 1954, 1962 and 1963 growing seasons. The longest continuing period of moderate to extreme drought in northeast Ohio is 32 months (July 1950-February 1953).

Generally, humidity rises and falls inversely with the daily temperature and is lowest in summer and highest in winter. For the year, relative humidity averages about 80% at 1 and 7 AM, 60% at 1 PM, and 65% at 7 PM. During summer afternoons, the relative humidity is often in the 50-60% range. 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 less than 30% in December and January. Fog that reduces visibility to less than 1/4 mile is most frequent in late summer and fall. Damaging winds of 35 to 85 mph 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 often by lightning and thunder. Since 1900, 6 tornadoes have been reported in Portage County. During the period 1953-1968, Ohio averaged about 10 tornadoes per year.

October 1969
 Marvin E. Miller
 ESSA Weather Bureau State Climatologist
 Box 15307
 Civic Center Station
 Columbus, Ohio 43215

STATION HISTORY

DATE	LOCATION	ELEVATION	OBSERVER
	(From Post Office)	(Ft. MSL)	
2/1948-Present	7.0 miles E	1000	Employees of Sewage Treatment Plant at the Ravenna Arsenal currently under the direction of Mr. J. F. Powell

TOTAL PRECIPITATION (INCHES)

YR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
49	3.93	1.76	2.16	3.01	2.76	2.04	6.06	4.67	3.28	.92	1.01	1.95	33.55
50	7.04	4.05	3.24	4.26	2.48	4.61	2.07	1.90	2.21	2.80	4.36	1.67	40.69
51	2.13	2.86	5.67	3.48	3.06	3.13	5.01	1.35	3.24	1.68	4.75	4.21	40.57
52	5.77	2.55	2.78	3.24	3.84	2.40	4.61	1.24	3.17	1.63	2.12	1.52	34.87
53	3.18	.69	2.12	2.25	4.42	2.90	1.86	2.91	1.24	.63	1.00	1.87	25.07
54	2.30	.97	4.52	5.49	2.09	2.42	1.03	5.10	2.36	7.77	1.38	1.97	37.34
55	1.39	1.84	5.37	4.04	2.47	5.02	2.64	2.27	2.11	4.46	1.00	2.09	43.65
56	1.30	4.19	3.87	4.14	5.40	6.18	3.31	3.39	3.93	1.86	2.69	3.77	34.03
57	1.65	1.14	1.81	5.18	2.93	6.92	3.56	3.18	3.25	.99	4.01	.52	35.80
58	2.14	.64	.89	3.85	5.91	4.01	8.71	3.85	3.25	.99	4.01	.52	35.80
59	4.82	4.14	2.68	3.95	4.60	7.04	5.73	4.00	3.75	4.81	3.46	2.73	51.71
60	2.60	2.20	7.77	1.63	5.77	2.23	5.03	3.29	.82	1.26	1.25	1.13	27.66
61	4.69	3.22	3.39	5.21	2.87	4.84	4.16	1.13	1.91	3.32	3.07	1.32	35.13
62	2.14	2.04	2.25	1.78	2.84	2.87	4.21	.44	3.34	3.05	2.55	1.73	29.24
63	.79	.56	3.08	4.00	2.11	1.39	3.88	2.61	1.47	.81	2.80	1.00	24.50
64	1.59	1.19	5.82	7.19	2.72	3.01	3.35	2.76	1.22	1.22	1.09	3.56	35.42
65	4.47	2.90	2.26	2.28	2.71	2.26	3.05	3.41	3.45	4.87	2.73	2.05	28.90
66	1.92	2.03	1.44	3.57	1.98	2.26	1.00	1.90	4.31	1.77	2.49	2.39	29.43
67	5.99	1.94	2.74	2.52	5.23	3.37	1.28	3.74	3.83	2.93	3.77	3.55	36.28
68	3.56	.30	1.95	2.58	5.64	3.37	1.28	3.74	3.83	2.93	3.77	3.55	36.28
69	2.26	.80	1.85	3.93									

AVERAGE TEMPERATURE (°F)

YR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
49	35.5	34.8	36.2	37.1	61.1	71.4	75.2	70.1	59.6	57.1	61.4	54.8	52.2
50	50.7	52.3	57.1	59.7	66.2	70.0	68.5	61.8	55.0	35.2	30.5	49.6	49.6
51	52.4	52.9	56.5	50.4	57.0	71.5	74.6	69.6	63.9	48.5	43.8	33.6	51.3
52	53.7	53.1	59.9	46.3	61.7	68.6	71.3	65.7	63.6	53.5	43.2	33.7	51.5
53	28.5	35.5	35.1	53.4	54.9	69.4	71.1	69.5	65.0	58.3	40.7	30.3	50.8
54	24.9	28.9	38.2	55.3	60.9	64.1	74.4	73.7	64.8	53.0	38.3	27.9	50.4
55	26.4	30.5	33.5	45.8	56.7	67.1	69.9	69.6	58.9	54.7	42.0	37.6	49.6
56	22.2	23.3	28.1	50.4	59.0	68.5	69.6	68.2	62.6	49.4	42.1	35.0	49.9
57	27.3	22.2	35.4	50.2	56.2	62.4	70.8	66.9	61.9	51.8	43.7	21.4	47.5
58	22.7	30.3	35.6	49.2	62.6	66.7	70.3	72.9	65.1	53.2	38.5	34.3	50.1
59	50.3	52.6	52.4	52.7	57.0	66.1	66.1	66.1	66.1	66.1	66.1	66.1	66.1
60	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.3
61	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.3
62	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.3
63	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.3	54.3
64	25.9	22.6	36.3	48.4	60.0	66.9	70.2	64.6	60.4	47.1	42.5	30.1	47.9
65	23.9	25.0	30.9	45.2	61.8	64.1	67.2	66.4	63.4	47.4	39.4	34.4	47.4
66	20.8	25.8	37.2	45.0	52.0	66.6	72.6	68.1	58.7	47.5	39.6	29.0	47.0
67	59.7	24.8	39.9	49.2	53.1	69.3	68.4	66.4	58.2	49.7	35.9	31.6	47.5
68	39.2	20.7	36.9	49.0	53.2	64.8	69.7	70.2	62.4	51.6	40.8	27.1	47.2
69	24.0	28.4	32.2	48.8									

MONTHLY AND SEASONAL SNOWFALL

SEASON	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	TOTAL
49-50	.0	.0	6.1	3.6	1.5	5.3	5.5	1.5	.0	23.5
50-51	.0	.0	11.1	9.0	10.2	18.5	.0	.0	.0	65.7
51-52	.0	.0	18.6	14.7	7.1	4.3	8.5	1.5	.0	48.2
52-53	.0	.0	1.0	9.8	10.5	9.8	14.0	.0	.0	48.5
53-54	.0	.0	4.4	9.8	10.5	9.8	14.0	.0	.0	48.5
54-55	.0	.0	5.2	14.7	8.1	9.5	8.2	.0	.0	45.7
55-56	.0	.0	11.8	8.5	8.0	8.6	9.3	1.2	.0	47.8
56-57	.0	.0	3.2	15.8	16.4	3.0	8.3	10.4	.0	57.1
57-58	.0	.0	2.5	2.9	7.6	7.1	8.0	5.4	.0	32.5
58-59	.0	.0	6.7	11.8	11.8	2.1	14.6	.0	.0	57.0
59-60	.0	.0	6.1	6.9	5.3	16.4	22.2	1.3	.0	60.2
60-61	.0	.0	1.2	24.0	8.3	17.4	15.1	8.1	.0	49.9
61-62	.0	.0	1.4	17.1	9.6	15.6	18.3	5.1	.0	54.9
62-63	.0	.0	3.0	17.1	9.6	11.3	10.7	1.4	.0	52.9
63-64	.0	.0	8.4	15.6	14.2	13.2	4.8	1.8	.0	58.0
64-65	.0	.0	.7	7.3	16.0	8.1	13.1	.0	.0	45.2
65-66	.0	.0	2.7	3.0	14.8	5.3	4.3	.0	.0	38.6
66-67	.0	.0	7.9	8.2	6.9	14.4	10.7	2.2	.0	50.6
67-68	.0	.0	7.4	4.9	11.1	8.9	8.0	.0	.0	48.3
68-69	.0	.0	3.5	18.9	8.3	8.6	4.3	.0	.0	45.6

PRECIPITATION WITH PROBABILITY EQUAL OR LESS THAN

	.05	.10	.20	.30	.40	.50	.60	.70	.80	.90	.95
JAN	.71	.97	1.37	1.73	2.09	2.46	2.85	3.24	3.97	4.96	5.87
FEB	.59	.76	1.16	1.68	2.04	2.58	2.74	3.13	3.58	4.17	4.48
MAR	1.84	2.47	2.62	2.98	3.31	3.64	3.99	4.40	4.90	5.66	6.35
APR	1.71	1.99	2.36	2.65	2.92	3.19	3.48	3.80	4.20	4.80	5.34
MAY	1.43	1.77	2.25	2.64	3.02	3.40	3.81	4.28	4.89	5.81	6.45
JUN	1.18	1.54	2.09	2.55	3.01	3.48	3.99	4.60	5.38	6.60	7.13
JUL	.86	1.14	1.54	1.89	2.23	2.58	2.97	3.42	4.01	4.93	5.49
AUG	.68	.90	1.23	1.55	1.82	2.07	2.33	2.60	3.02	3.66	4.14
SEPT	.61	.81	1.06	1.40	1.74	2.10	2.35	2.62	3.06	3.74	4.24
OCT	.51	.67	.86	1.12	1.42	1.72	2.02	2.32	2.74	3.34	3.84
NOV	.49	.67	.86	1.12	1.42	1.72	2.02	2.32	2.74	3.34	3.84
DEC	.49	.67	.86	1.12	1.42	1.72	2.02	2.32	2.74	3.34	3.84
ANN	25.17	27.09	29.55	31.42	33.08	34.68	35.33	36.15	40.36	43.56	46.33

Median precipitation amounts (0.50 probability level) in the above table differ from the means shown on the opposite page because of the method used in making the computations. The above values were determined from the gamma distribution whose curve has been found to give best fits to precipitation climatological series.