U. S. DEPARTMENT OF COMMERCE, ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
IN COOPERATION WITH THE OHIO AGRICULTURAL RESEARCH AND DEVELOPMENT CENTER
AND THE OHIO DEPARTMENT OF NATURAL RESOURCES - DIVISION OF WATER
CLIMATOGRAPHY OF THE UNITED STATES NO. 20-33-81

LATITUDE 39° 33' N
LONGITUDE 82° 04'W
ELEV. (GROUND) 760 Ft.

CLIMATOLOGICAL SUMMARY

STATION: Tom Jenkins Dam

MEANS AND EXTREMES FOR PERIOD 1954-1966

MONTH	TEMPERATURE (°F) MEANS: DAILY MAXIMUM	DAILY MINIMUM	MONTHLY	EXTREMES: RECORD HIGHEST	YEAR	DAY	RECORD LOWEST	YEAR	DAY	MEAN DEGREE DAYS **	MEAN NUMBER OF DAYS: MAX. 90° AND ABOVE	MAX. 32° AND BELOW	MIN. 32° AND BELOW	MIN. 0° AND BELOW	PRECIPITATION TOTALS (INCHES): MEAN	GREATEST MONTHLY	YEAR	GREATEST DAILY	YEAR	DAY	SNOW, SLEET: MEAN	MAXIMUM MONTHLY	YEAR	GREATEST DAILY	YEAR	DAY	MEAN NUMBER OF DAYS: .01 or MORE	.10 or MORE	.50 or MORE	1.00 or MORE	MONTH
JAN	36.6	13.7	25.1	70	66	1	-26*	63	29	1226.	0	11	29	5	2.69	4.55	59	1.32	66	23	8.7	16.0	64	13.0	66	23	12	6	1.7	.3	JAN
FEB	40.8	16.7	28.7	76	54	16	-18*	65	5	1019.	0	7	25	3	2.99	6.17	56	1.62	65	25	6.6	18.0	60	11.0	60	14	13	6	2.0	.3	FEB
MAR	49.5	24.0	36.7	82	66	23	-9	60	8	872.	0	2	24	0	3.80	8.12	64	2.87	63	5	5.1	18.0	60	6.0*	60	3	13	7	2.3	.7	MAR
APR	63.8	35.?	49.5	90	57	28	10	64	1	468.	0	0	13	0	3.82	7.24	64	1.46	58	29	.6	4.0	59	4.0	59	13	14	9	2.4	.6	APR
MAY	74.3	43.9	59.1	93	62	19	18	66	10	223.	0	0	4	0	3.01	5.11	56	1.31	54	29	.0						11	7	2.0	.3	MAY
JUNE	81.0	52.3	66.6	98	66	26	30	66	2	66.	3	0	0	0	2.86	5.04	58	2.15	58	14	.0						10	6	1.7	.6	JUNE
JULY	84.5	57.0	70.7	103	54	15	39*	65	21	15.	6	0	0	0	4.47	6.73	66	2.94	54	21	.0						11	8	3.1	1.1	JULY
AUG	83.7	54.8	69.2	98*	59	26	30*	65	30	28.	4	0	0	0	2.90	5.66	54	1.72	55	11	.0						9	6	2.0	.4	AUG
SEPT	78.1	47.4	62.7	97	54	7	24	62	21	140.	2	0	2	0	3.16	7.92	66	4.65	66	20	.0						8	4	2.2	.8	SEPT
OCT	66.7	34.8	50.7	87*	59	6	10	62	27	445.	0	0	13	0	2.47	6.24	59	2.63	59	9	.1	2.0	62	2.0	62	26	9	5	1.5	.3	OCT
NOV	53.6	26.8	40.2	83	61	4	-14	58	30	741.	0	1	22	0	2.49	4.74	66	1.85	62	10	2.3	8.0	58	5.0	59	28	10	6	1.3	.3	NOV
DEC	40.0	17.8	28.9	72*	66	8	-23	62	13	1114.	0	8	27	3	2.51	4.51	57	1.40	64	12	5.7	17.0	62	6.0	60	12	11	6	1.5	.3	DEC
YEAR	62.7	35.3	49.0	103	54	JULY 15	-26*	63	JAN 29	6357.	15	29	159	11	37.17	8.12	MAR 64	4.65	SEPT 66	20	29.1	18.0	FEB 60	13.0	JAN 66	23	131	76	24.	6.	YEAR

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

NARRATIVE CLIMATOLOGICAL SUMMARY

Tom Jenkins Dam is located in the extreme north central portion of Athens County in southeast Ohio. Terrain within Athens County is rugged and hilly; the elevation of the earth's surface above mean sea level varies from about 590 to 1035 feet. A map of the physiographic regions of Ohio shows Athens County to be a part of the State's unglaciated plateau. Soils within this area are generally thin except in valleys where most of the agricultural and manufacturing activities are located. These valley areas are also prone to extended periods of atmospheric stagnation. During such periods, the ability of the atmosphere to transport and diffuse pollutants emitted into the air is reduced.

The climate of Athens County is classified as continental. Such a climate is marked by a large annual, daily, and day to day ranges of temperatures. In the Tom Jenkins Dam area, summers are moderately warm and humid with several days when temperatures climb into the 90s. Winters are reasonably cold and cloudy and days with subzero temperatures are not uncommon. Weather changes occur every few days from the passing of cold or warm fronts and their associated centers of high and low pressures.

On nights with clear skies and light winds there is often a large variation in observed surface temperatures within Athens County. This is expecially true in the vicinity of the Tom Jenkins Dam. 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 temperatures between valley floors and the tops of hills. Because of this cold air drainage the normal average annual temperature at the Tom Jenkins Dam is 4° F below the average for southeast Ohio. In 8 of 10 years the average annual temperature at this location is in the 47.1° F to 51.0° F range. 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 90° F in 9 of 10 years, 95° F in 5 of 10 years, and 99° F in 1 of 10 years. Lowest temperature during the year is equal to or less than -4° F in 9 of 10 years, -14° F in 5 of 10 years, and -23° F in 1 of 10 years.

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.

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 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 70% at 7 PM. During summer afternoons the 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 35% in December. The occurrences of fog that reduces visibility to less than 1/4 mile is most frequent during 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 hail and often by lightning and thunder. Since 1900, 3 such storms have been reported in Athens County. During the period 1953-1968, Ohio has averaged about 10 tornadoes per year.

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. Since 1929, extended periods of moderate to extreme drought in southeast Ohio, as determined from the Palmer Drought Severity Index, have occurred during the 1930-1932, 1934, 1936, 1953, and 1954 growing seasons. The longest continuing period of moderate to extreme drought in southeast Ohio is 21 months (November 1952-July 1954).

As is characteristic of continental climates, precipitation in the Tom Jenkins Dam area varies widely from year to year, however, it is normally abundant and well distributed throughout the year with fall being the driest season. Showers and thundershowers account for most of the rainfall during the gorwing season. Thunderstorms occur on about 40 days each year and are most frequent from April through August. Heavy rains of 2.1, 3.1, 3.8, 4.6, 5.3, and 5.9 inches in 24-hours can be expected at least once in 2, 5, 10, 25, 50, and 100 years, respectively. As is typical of much of Ohio, most precipitation during the winter months comes in the form of rain. During any year, snowfall may fluctuate widely from the annual mean is given in the above table.

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 only 128 days at the Tom Jenkins Dam. In 8 of 10 years the length of the growing season is in the 105-150 day range. Similar information for other Athens County areas may differ significantly from the above data due to the variations in topography within the county.

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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 22	MAR 24	APR 3	APR 16	MAY 3	MAY 7
70	MAR 26	APR 3	APR 12	APR 24	MAY 11	MAY 19
50	MAR 30	APR 9	APR 18	APR 30	MAY 17	MAY 27
30	APR 2	APR 16	APR 24	MAY 6	MAY 23	JUNE 4
10	APR 7	APR 25	MAY 3	MAY 15	JUNE 1	JUNE 16
PERCENT CHANCE OF EARLIER DATE IN FALL						
10	OCT 22	OCT 20	OCT 2	SEPT 19	SEPT 7	AUG 28
30	NOV 3	OCT 26	OCT 12	SEPT 27	SEPT 16	SEPT 5
50	NOV 11	OCT 31	OCT 20	OCT 3	SEPT 23	SEPT 11
70	NOV 19	NOV 5	OCT 27	OCT 9	SEPT 29	SEPT 16
90	NOV 30	NOV 11	NOV 6	OCT 17	OCT 8	SEPT 24

STATION HISTORY

DATE	LOCATION	ELEVATION	OBSERVER
Date	Location (From Post Office)	Elevation (Ft. MSL)	Observer
1/1951-Present	Tom Jenkins Dam off State Route 13	760	U. S. Corps of Engineers H. P. Hughes current dam operator.

AVERAGE TEMPERATURE (°F)

YR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNL
54	30.2	36.6	36.0	54.9	55.7	70.3	70.7	70.0	64.7	55.0	39.8	29.8	51.1
55	27.7	29.2	39.4	53.9	61.1	63.4	75.4	74.4	65.0	52.5	37.2	26.5	50.4
56	25.7	34.6	36.3	46.7	58.9	66.3	71.3	69.6	60.4	54.5	41.2	39.3	50.6
57	24.4	34.5	38.0	52.3	61.1	70.6	71.3	68.8	64.6	47.3	40.0	33.9	50.6
58	25.1	21.9	35.2	50.2	57.5	64.1	72.3	68.1	62.8	50.2	43.1	21.0	47.6
59	24.7	30.2	35.9	50.2	63.9	67.6	72.3	74.1	65.5	51.7	37.8	33.4	50.6
60	31.1	27.7	24.7	52.7	57.3	66.6	68.5	71.2	65.1	49.8	40.2	21.3	48.0
61	20.8	33.1	42.3	43.2	54.4	64.5	70.1	69.8	66.6	51.9	39.9	30.2	48.9
62	24.3	29.0	35.9	45.7	64.8	67.7	68.4	67.8	58.0	51.6	38.1	23.2	47.9
63	19.1	19.4	41.1	48.1	55.0	64.8	68.2	64.9	58.9	54.3	42.7	21.0	46.5
64	27.6	25.3	39.0	51.5	60.2	66.5	71.5	67.1	61.5	46.3	41.9	32.5	49.3
65	26.1	26.3	34.3	47.9	63.6	65.3	67.7	66.3	63.9	47.5	40.2	33.5	48.6
66	20.6	26.4	39.8	47.5	54.7	67.1	72.2	68.2	59.3	47.4	40.7	30.2	47.8
67	**32.5**	**25.1**	**39.1**	**50.7**	**54.3**	**68.8**	**68.1**	**66.6**	**57.7**	**50.2**	**36.3**	**32.2**	**48.5**
68	**19.5**	**21.5**	**38.7**	**49.5**	**55.7**	**66.7**	**70.4**	**71.2**	**62.7**	**51.1**	**42.4**	**29.5**	**48.2**
69	**25.4**	**30.2**											

TOTAL PRECIPITATION (INCHES)

YR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNL
54	2.94	.47	2.88	2.86	3.52	3.56	4.44	5.66	1.17	4.51	1.04	3.31	37.16
55	1.39	4.64	5.36	3.25	2.42	2.58	4.57	4.33	1.84	2.88	1.59	.51	35.36
56	2.43	6.17	4.77	3.72	5.11	2.85	2.75	2.80	3.50	2.23	.99	4.15	41.47
57	2.81	2.36	1.52	4.56	3.24	3.58	2.04	1.36	3.67	2.52	3.77	4.51	35.94
58	2.08	1.33	1.94	4.28	3.63	5.04	6.61	4.00	4.53	.99	2.52	.87	37.82
59	4.55	3.09	2.52	3.05	2.25	1.11	4.20	1.62	1.48	6.24	3.13	2.41	35.65
60	3.08	3.03	1.73	1.64	4.25	2.89	3.63	3.51	1.97	2.15	2.76	1.83	32.47
61	1.56	3.07	5.04	5.60	3.87	3.75	5.89	3.05	1.11	2.47	2.48	3.38	41.27
62	2.82	4.77	3.21	2.18	3.72	2.47	5.01	2.40	4.43	2.16	3.12	2.63	38.92
63	1.77	1.30	7.78	2.17	1.93	3.10	5.28	3.28	.62	.29	1.39	1.52	30.43
64	2.34	1.92	8.12	7.24	1.40	3.62	1.83	1.46	1.81	1.12	1.80	4.47	37.13
65	2.87	3.51	2.99	5.52	1.48	1.35	5.23	3.49	7.14	3.36	2.29	.76	39.99
66	4.42	3.28	1.58	3.66	2.33	1.39	6.73	.81	7.92	1.21	4.74	2.36	40.43
67	**.87**	**1.92**	**6.11**	**2.72**	**5.52**	**.15**	**4.15**	**2.32**	**1.72**	**1.60**	**3.07**	**2.77**	**32.92**
68	**3.53**	**.70**	**4.28**	**2.46**	**10.67**	**5.48**	**3.77**	**5.32**	**2.01**	**2.01**	**3.15**	**2.94**	**46.32**
69	**2.98**	**.67**											

MONTHLY AND SEASONAL SNOWFALL

SEASON	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	TOTAL
54-55	.0	.0	2.0	4.0	5.0	7.0	2.0	.0	.0	20.0
55-56	.0	.0	5.0	.0	9.0	.0	7.0	.0	.0	21.0
56-57	.0	.0	2.0	3.0	5.0	2.0	3.0	.0	.0	15.0
57-58	.0	.0	.0	7.0	4.0	2.0	7.0	.0	.0	20.0
58-59	.0	.0	8.0	3.0	8.0	.0	7.0	4.0	.0	30.0
59-60	.0	.0	6.0	4.0	.0	18.0	16.0	.0	.0	44.0
60-61	.0	.0	.0	11.0	12.0	13.0	1.0	2.0	.0	39.0
61-62	.0	.0	1.0	10.0	7.0	10.0	8.0	.0	.0	36.0
62-63	.0	2.0	.0	17.0	12.0	10.0	1.0	.0	.0	42.0
63-64	.0	.0	2.0	13.0	16.0	9.0	1.0	.0	.0	41.0
64-65	.0	.0	1.0	1.0	9.0	7.0	6.0	.0	.0	24.0
65-66	.0	.0	.0	.0	15.0	7.0	1.0	1.0	.0	24.0
66-67	**.0**	**.0**	**4.0**	**2.0**	**2.0**	**13.0**	**12.0**	**.0**	**.0**	**33.0**
67-68	**.0**	**.0**	**2.0**	**8.0**	**26.0**	**3.0**	**.0**	**.0**	**.0**	**39.0**
68-69	**.0**	**.0**	**.0**	**5.0**	**2.0**	**.0**				

PRECIPITATION WITH PROBABILITY EQUAL OR LESS THAN

	.05	.10	.20	.30	.40	.50	.60	.70	.80	.90	.95
JAN	1.39	1.61	1.91	2.15	2.37	2.59	2.82	3.08	3.41	3.96	4.33
FEB	.83	1.11	1.54	1.92	2.29	2.67	3.10	3.60	4.26	5.29	6.25
MAR	1.14	1.50	2.04	2.50	2.96	3.43	3.95	4.56	5.35	6.58	7.72
APR	1.71	2.05	2.52	2.90	3.26	3.62	4.01	4.45	5.01	5.85	6.62
MAY	1.42	1.68	2.04	2.32	2.60	2.87	3.15	3.48	3.89	4.52	5.07
JUN	1.25	1.51	1.87	2.16	2.43	2.71	3.00	3.34	3.77	4.42	5.01
JUL	2.12	2.51	3.04	3.47	3.87	4.27	4.69	5.18	5.79	6.70	7.53
AUG	1.02	1.30	1.69	2.03	2.32	2.67	3.03	3.45	3.98	4.80	5.55
SEP	.59	.87	1.34	1.77	2.21	2.68	3.21	3.86	4.71	6.09	7.40
OCT	.68	.76	1.12	1.45	1.78	2.13	2.52	3.00	3.62	4.62	5.55
NOV	1.11	1.33	1.66	1.89	2.12	2.36	2.61	2.90	3.26	3.82	4.32
DEC	.63	.86	1.23	1.55	1.87	2.21	2.59	3.03	3.62	4.54	5.46
ANN	31.77	32.38	34.44	35.49	36.39	37.23	38.07	38.97	40.02	41.40	42.68

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 incomplete gamma distribution whose curve has been found to give best fits to precipitation climatological series.