

U.S. DEPARTMENT OF COMMERCE  
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION

CLIMATOGRAPHY OF THE UNITED STATES NO. 20 - 40

CLIMATOLOGICAL SUMMARY

STATION Rogersville, Tennessee

LATITUDE 36° 24' N  
LONGITUDE 82° 59' W  
ELEV. (GROUND) 1375 Feet

MEANS AND EXTREMES FOR PERIOD 1931-1965

Month	Temperature (°F)									* * Mean degree days	Precipitation Totals (Inches)						Mean number of days					Month	
	Means			Extremes			Mean	Greatest daily	Year		Snow, Sleet			Precip. .10 inch or more	Temperatures								
	Daily maximum	Daily minimum	Monthly	Record highest	Year	Record lowest					Year	Mean	Maximum monthly		Year	Greatest daily	Year	90° and above	Max.		Min.		
																			32° and below	32° and below	0° and below		0° and below
(a)	35	35	35	35	35	35	30	35	35														
J	49.6	28.9	39.3	80	1950	-14	1940+	775	4.39	2.65	1954	2.7	15.8	1940	13.0	1940	9	0	2	20	*	J	
F	52.8	29.7	41.3	79	1939	-2	1965+	647	4.46	1.97	1945	2.0	15.8	1936	13.3	1936	8	0	1	17	*	F	
M	60.1	35.4	47.8	84	1950+	-1	1960	539	4.82	3.68	1963	1.4	10.6	1954	10.5	1954	9	0	*	13	*	M	
A	71.1	44.4	57.8	91	1942+	20	1964	219	3.74	2.50	1956	*	0.3	1943	0.3	1943	8	*	0	4	0	A	
M	79.0	53.1	66.1	96	1941	28	1963	59	3.38	2.20	1950	*	T	1955	T	1955	8	1	0	*	0	M	
J	86.0	60.8	73.4	104	1936	40	1935+	0	3.22	4.20	1947	0	0	0	0	0	7	8	0	0	0	J	
J	87.9	64.3	76.1	102	1952	45	1963	0	4.68	2.73	1960	0	0	0	0	0	9	11	0	0	0	J	
A	87.6	63.0	75.3	100	1932	45	1965+	0	3.52	3.93	1957	0	0	0	0	0	7	11	0	0	0	A	
S	84.2	57.0	70.6	101	1954	35	1963	33	2.58	2.76	1944	0	0	0	0	0	5	7	0	0	0	S	
O	73.6	45.1	59.4	95	1941	16	1962	186	2.28	3.30	1964	T	T	1937	T	1937	4	1	0	3	0	O	
N	60.1	35.0	47.6	84	1948+	9	1964	522	3.19	2.80	1952	0.7	10.6	1952	10.0	1952	6	0	*	13	0	N	
D	50.0	29.2	39.6	81	1951	-8	1962	772	3.83	2.85	1958	1.5	12.0	1963	10.0	1963	8	0	2	20	*	D	
Year	70.2	45.5	57.9	104	June 1936	-14	Jan. 1940+	3752	44.09	4.20	June 1947	8.3	15.8	Jan. 1940+	13.3	Feb. 1936	88	39	5	90	1	Year	

(a) Average length of record, years.

+ Also on earlier dates, months, or years.

T Trace, an amount too small to measure.

\* Less than one half.

\*\* Base 65°F Climatology of the United States, No. 83-35, Tennessee

NARRATIVE CLIMATOLOGICAL SUMMARY

ROGERSVILLE lies in the extreme northeastern portion of that section of Tennessee widely known as the Great Valley of East Tennessee, an area noted for its great variety of climate and altitude within short distances. The city is near the geographical center of Hawkins County, at a position near Cherokee Lake-Holston River which is between the Cumberland Mountains to the west and the Appalachian Mountains on the east. The mountain ranges are oriented northeast-southwest and the valley between is corrugated by a number of broken ridges 300 to 500 feet high and oriented parallel to the main valley.

The proximity of the mountain ranges has a distinct influence on the weather. The annual precipitation of 44 inches is about 12 inches less than on the Appalachian Mountains. Precipitation in Rogersville is normally well distributed over the year. The heaviest amounts usually occur during the winter months, due to frequent flows of moist air from southern latitudes, which is generally deep enough to precipitate over the southern section of the Appalachian Mountains. The least rain falls in the harvest months of September and October. Summer rainfall comes mostly from local showers and thunderstorms, occasionally augmented by slow-moving weather fronts in the area. Winter rain is more likely to be slow and steady, produced by low pressure storms moving across the country from southwest to northeast. Snowfall seldom occurs before November, and rarely remains on the ground for more than a few days. However, mountains to the west and east of the city are frequently well blanketed with snow for much longer periods of time.

A statistical study of heavy precipitation in just a few hours in this area indicates the probability of occurrence of totals at least as great as those listed below. These rates do not vary appreciably in East Tennessee.

Frequency in 100 years	Inches in 1 hour	6 hours	12 hours
1	3.1	4.9	5.9
4	2.5	3.9	4.9
20	1.9	2.9	3.5
90	1.2	1.9	2.4

The range of extremes of temperatures on record for Rogersville is less than that for many places in the west portion of the State. The number of days with temperatures 90 degrees or higher has ranged from 1 in 1963 to 81 in 1936. Occasionally, temperatures will exceed 90 degrees as early as April and as late as October, but the greatest frequency generally occurs in July and August. Although two-thirds of the days during the winter months have temperatures 32 degrees or lower, only about 1 day has temperatures 0 degrees or lower. The number of days when maximum temperatures fail to rise above freezing has ranged from 0 in 1949 to 16 days in 1958.

The average relative humidity in Rogersville at sunrise is about 85 percent, decreasing to near 55 percent by early afternoon. Prevailing winds are usually either up-valley, from west to southwest, or down-valley, from east to northeast. Average wind speed is about 5 miles per hour.

Heating degree-days in the summary table provide a basis for computing heating requirements, fuel consumption being proportional to degree-day totals. Degree-days for any one day are obtained by subtracting the mean temperature for that day from 65 degrees.

This area has a favorable and moderate climate, with many days of the year being nearly ideal in temperature. On the whole, the fall season is the most pleasant time of the year. Rainfall is at a minimum and temperature extremes are practically non-existent.

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(Summary prepared September 1969)

Total Precipitation (Inches)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1931	1.74	2.96	2.05	5.15	2.68	4.77	3.47	3.64	2.25	1.53	1.45	6.36	31.35
1932	5.01	6.05	5.45	3.70	3.40	4.84	1.11	1.98	1.32	4.88	2.99	6.92	47.48
1933	3.93	5.76	3.65	4.65	6.78	1.80	6.03	1.73	2.67	3.31	1.44	3.62	42.07
1934	3.35	2.70	8.50	2.40	1.85	3.35	5.73	8.69	3.69	2.82	4.18	1.77	49.09
1935	3.32	3.50	9.25	5.28	4.60	3.36	3.97	2.73	1.39	1.31	5.79	1.03	45.53
1936	7.20	3.92	5.82	4.40	4.18	.92	5.27	2.22	3.70	3.69	1.43	5.67	44.82
1937	8.82	4.68	2.69	2.69	2.23	2.52	6.13	3.98	3.87	4.78	1.06	2.80	44.82
1938	4.07	1.70	3.83	3.78	5.92	2.81	8.00	2.66	3.48	.30	3.55	2.31	42.41
1939	3.24	6.84	4.71	4.02	5.76	1.45	4.52	1.40	1.94	1.25	1.86	2.72	42.41
1940	1.60	3.95	4.71	4.20	1.74	2.83	6.80	4.86	.64	1.93	1.72	1.96	36.94
1941	1.96	.81	3.66	3.11	.83	3.44	5.68	1.66	1.57	2.14	2.18	2.21	29.28
1942	2.48	2.78	3.50	.55	4.09	3.45	6.32	6.87	2.79	2.69	1.86	6.35	43.94
1943	2.13	3.97	4.04	3.13	2.45	3.15	5.57	2.40	3.44	2.12	1.83	2.38	43.94
1944	2.17	7.81	6.73	3.32	2.22	2.68	1.22	3.25	6.53	1.88	3.50	4.10	45.41
1945	3.12	6.79	3.23	2.80	5.71	5.55	4.48	3.62	3.33	3.11	3.24	4.75	49.73
1946	6.80	4.76	3.76	2.86	4.14	1.60	3.01	5.82	1.87	2.99	2.09	3.46	43.16
1947	10.18	1.95	2.70	2.14	2.24	4.73	4.36	7.18	1.79	1.33	3.93	2.21	45.74
1948	3.68	6.72	4.77	2.49	2.51	3.29	7.04	4.09	3.60	1.28	2.06	5.18	53.98
1949	4.95	2.70	3.54	5.01	4.04	3.29	7.88	4.62	2.39	4.42	2.66	2.55	49.22
1950	8.36	6.50	3.00	1.47	8.37	4.54	5.32	3.05	1.89	1.32	2.95	2.75	51.32
1951	3.93	4.37	5.23	3.95	2.96	3.99	4.32	1.98	4.48	2.20	5.68	5.60	48.59
1952	4.85	2.25	4.66	2.75	3.18	1.44	4.72	3.47	2.12	1.12	2.77	3.21	39.27
1953	8.03	5.60	4.32	2.50	6.79	2.06	2.06	1.96	2.99	.80	3.15	3.43	36.87
1954	19.54	1.63	4.42	2.11	2.69	3.51	1.06	1.84	.80	3.15	4.08	4.08	37.50
1955	1.91	5.88	8.45	3.16	4.44	2.13	3.30	3.83	2.77	3.85	2.68	3.37	45.44
1956	7.04	7.04	5.25	6.80	2.63	3.32	6.49	2.80	1.44	1.64	2.06	5.61	48.84
1957	8.72	1.95	2.02	4.77	.72	3.85	1.63	4.80	4.53	2.31	7.43	5.42	51.53
1958	1.82	4.80	4.19	7.52	5.59	3.40	7.08	2.54	1.88	1.01	2.46	4.87	48.07
1959	3.83	3.93	4.88	5.21	5.11	2.25	2.21	4.09	5.36	5.75	5.75	4.62	51.48
1960	3.64	3.03	4.88	2.45	4.52	4.81	5.43	3.12	1.44	3.58	2.67	3.23	42.01
1961	3.24	8.29	4.85	3.86	3.24	3.33	4.15	4.09	1.22	2.69	2.31	8.64	49.91
1962	6.61	7.77	5.72	3.90	4.49	4.11	4.49	2.90	2.26	1.22	1.22	3.92	52.96
1963	3.66	2.45	10.04	3.05	4.11	4.21	6.78	4.12	4.43	.02	2.86	1.45	44.09
1964	3.29	4.47	4.29	5.28	1.31	1.58	2.21	4.31	1.85	4.26	4.84	4.84	41.01
1965	4.94	3.97	5.79	6.12	1.83	4.07	2.20	3.28	2.06	2.54	3.36	.60	40.76

Estimated

Average Temperature (°F)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1931	37.1	41.8	43.4	55.4	65.1	73.6	79.2	74.6	71.0	60.4	53.3	47.2	58.4
1932	46.6	47.4	43.0	56.8	65.2	73.6	77.2	76.9	71.0	78.4	44.2	40.6	58.4
1933	42.9	37.6	46.7	56.5	69.3	75.4	76.2	73.8	74.7	58.8	45.2	45.0	58.5
1934	41.2	33.7	45.8	56.2	66.6	75.0	82.0*	72.4	77.8	60.5	50.8	39.0	58.5
1935	40.2	42.1	55.2	57.7	66.6	71.4	77.8	77.8	71.8	60.5	51.4	32.4	58.7
1936	35.6	36.2	50.2	56.8	69.6	76.5	77.9	78.8	73.8	69.0	46.8	44.3	59.0
1937	50.4	48.6	46.2	57.0	65.6	74.0	75.1	77.0	69.8	69.0	46.8	37.8	57.9
1938	39.8	48.6	55.4	59.4	68.6	71.9	76.4	77.6	70.4	60.3	49.6	38.2	57.5
1939	41.2	47.1	46.2	55.8	67.6	77.2	76.6	76.2	75.2	60.4	45.8	45.3	56.7
1940	27.2	39.9	46.2	56.9	63.6	73.6	75.2	75.4	68.2	60.4	48.8	45.3	56.7
1941	39.4	35.6	42.8	60.3	68.0	74.8	78.0	78.8	74.6	67.2	48.0	45.1	59.4
1942	36.6	36.8	47.6	59.5	66.8	75.2	77.0	74.8	69.6	60.9	50.9	40.3	58.2
1943	41.6	43.0	47.6	56.4	68.6	78.0	76.8	77.8	68.0	57.9	46.4	35.8	58.2
1944	37.9	43.9	49.5	55.6	69.3*	73.6	77.2	77.6	72.8	58.4	49.6	36.0	59.6
1945	39.2	44.9	49.5	61.9	63.4	73.6	77.2	76.2	74.9	58.4	50.6	36.0	59.6
1946	40.8	44.0	56.6	60.4	65.5	73.2	78.1	72.7	70.2	60.8	55.4	43.5	60.1
1947	45.0	32.6	39.9	61.4	64.4	72.7	72.2	77.3	72.2	65.2	47.4	39.9	57.5
1948	32.8	44.8	51.2	62.6	65.8	73.6	77.4	74.9	71.3	66.4	53.1	44.3*	59.5
1949	50.8	46.9	47.4	55.1	68.7	73.5	74.9	74.0	69.0	64.1	43.5	35.2	58.6
1951	41.2	43.7	49.5	56.4	65.3	73.1	76.6	77.3	71.2	62.2	43.3	42.6	58.5
1952	45.6	45.6	49.3	58.9	65.3	78.2	79.2	75.7	69.2	62.2	47.3*	38.3	59.1
1953	43.9	45.4	51.9	62.7	70.2	75.4	77.4	75.6	68.8	61.0	46.4	36.8	59.1
1954	32.2	45.4	46.7	62.7	60.6	73.1	77.4	75.8	71.9	63.9	43.9	36.8	57.7
1955	35.2	39.9	-	60.8	67.5	67.7	78.0	78.0	73.1	57.5	42.3*	37.0	-
1956	32.9	44.8	47.1	53.8*	66.0*	71.6	74.8*	73.0	65.4*	63.2	44.6*	47.6	56.9
1957	38.7	47.1	46.9	67.8	67.8	74.7	76.2	74.7	71.2	55.0	48.2	41.8*	58.6
1958	33.6	29.1	43.7	56.9	65.7	72.4*	76.1	73.6	67.7	55.0	49.6	34.4	54.9
1959	34.9	42.8	44.5	57.6	68.6	71.1	75.1	76.1	70.1	64.3	40.3	27.0	57.0
1960	38.0	36.7	58.3	58.3	61.7	71.2	73.8	74.0	69.6	58.9	45.6	32.1	54.5
1961	32.4	44.6	50.6	51.3	61.1	69.0	72.9	72.8	69.6	56.1	50.3	38.8	55.8
1962	36.1	44.6	44.8	53.3	70.8	70.6	73.3	72.7	66.5	57.2	44.6	28.0	-
1963	31.6	32.7	51.1	58.2	63.6	70.5	71.2	71.7	66.2	60.1	46.4	24.6	54.3
1964	34.7	33.9	46.4	58.4	65.5	72.5	73.3	71.4	66.2	52.3	48.7	40.7	55.3
1965	37.5	37.6	44.4	59.8	68.8	70.9	74.4	73.0	68.5	53.2	46.1	36.6	55.9

\*Days Missing  
No Record

\*Interpolated or partly interpolated.

STATION HISTORY

A climatological station was established at Rogersville, May 1883. No major breaks have occurred in either the temperature or rainfall record.

The station has been located continuously within the city limits. Early observers include: S. V. McCorkle, May 1883 to June 1883; F. F. Miller, June 1883 to August 1883; Dr. S. M. Miller, June 1885 to September 1889; Mrs. C. H. Nye, October 1889 to January 1890; Dr. S. M. Miller, February 1890 to December 1895; J. G. Stearns, January 1896 to March 1902; Fred Beal, April 1902 to April 1931; John Beal, May 1931 to June 1934; Ida Mae Stearns, July 1934 to December 1943; Jack Stearns, December 1943 to April 1944; Emma V. Woods, May 1944 to December 1947; Ida H. Dean, January 1948 to February 1955; Since March 1955, the station has been located at Radio Station WMOB in Rogersville. All instrument exposures have been over level ground surface and considered good.

PROBABILITY OF LOW TEMPERATURES IN SPRING AND FALL

Minimum Temp. (°F)	Percent of occurrence after the date in spring				Percent of occurrence before the date in fall				
	90%	75%	50%	25%	10%	25%	50%	75%	90%
32	4/14	4/20	4/17	4/24	10/8	10/16	10/24	11/1	11/9
28	3/8	3/19	3/20	4/10	10/21	10/27	11/3	11/20	11/26
24	2/23	3/4	3/14	3/24	11/3	11/10	11/18	11/28	12/3
20	2/8	2/18	3/2	3/24	11/16	11/22	11/29	12/8	12/31
16	1/21	2/7	2/21	3/6	11/23	11/30	12/8	12/24	-

This table summarizes for a 30-year period, the dates when low temperatures last occurred in the spring and first occurred in the fall at Rogersville. The average date is given in the 50% column. In the spring the table shows that for a temperature 30° or lower, there is a 90% chance (9) chances out of ten) after April 14, a 10% chance (1) chance out of 10) after April 30. In the fall, there is a 10% chance of a freeze, 30° or lower before October 8, a 90% chance before November 9. It should be noted that all freeze data are based on temperatures in a standard U.S. Weather Bureau thermometer shelter at a height of approximately 5 feet above ground and in a representative exposure. Lower temperatures will exist at times nearer the ground and/or in local areas subject to extreme air drainage.