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ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION, WEATHER BUREAU
IN COOPERATION WITH AGRICULTURAL EXPERIMENT STATION,
UNIVERSITY OF MISSOURI CLIMATOGRAPHY
OF THE UNITED STATES NO. 20-23

CLIMATOLOGICAL SUMMARY

LATITUDE 38° 49'
LONGITUDE 91° 08'
ELEV. (GROUND) 845

STATION WARRENTON, MISSOURI

MEANS AND EXTREMES FOR PERIOD 1931-1960

Month	Temperature (°F) Means: Daily maximum	Daily minimum	Monthly	Extremes: Record highest	Year	Record lowest	Year	** Mean degree days	Precipitation Totals (Inches): Mean	Greatest daily	Year	Snow, Sleet: Mean	Maximum monthly	Year	Greatest daily	Year	Mean number of days: Precip. .10 inch or more	Temperatures: Max. 90° and above	Max. 32° and below	Min. 32° and below	Min. 0° and below	Month
(a)	30	30	30	30		30		30	30	30		30	30		30		30	30	30	30	30	
Jan.	42.0	22.7	32.3	77	1953	-16	1936	1013	1.92	1.67	1935	4.5	13.0	1939	7.0	1942	5	0	7	25	2	Jan.
Feb.	45.8	25.2	35.5	80	1932	-12	1958	834	2.02	1.88	1957	4.1	14.0	1960	6.0	1939	5	0	4	22	1	Feb.
Mar.	54.8	32.3	43.5	88	1945	-11	1948	668	3.16	1.77	1950	4.4	18.5	1947	12.0	1937	7	0	2	17	0	Mar.
Apr.	67.7	44.0	55.8	92	1942	17	1936	305	3.54	2.72	1941	0.1	2.0	1940	2.0	1940	7	0	0	4	0	Apr.
May	76.9	53.3	65.1	100	1934	30	1944	99	4.09	2.66	1931	0	0.4	1944	0.4	1944	8	2	0	0	0	May
June	85.8	63.2	74.5	106	1936	39	1946	10	4.76	3.37	1937	0	0.5	1952	0.5	1952	7	10	0	0	0	June
July	90.7	66.7	78.7	114	1954	43	1947	1	3.33	3.45	1948	0	0		0		5	17	0	0	0	July
Aug.	89.2	65.2	77.2	110	1934	42	1956	3	2.92	3.78	1934	0	0		0		5	16	0	0	0	Aug.
Sept.	82.4	57.3	69.8	105	1947	30	1942	51	3.70	3.70	1943	0	0		0		5	8	0	0	0	Sept.
Oct.	71.6	46.9	59.2	97	1953	22	1942	222	3.13	2.85	1941	0	0		0		6	1	0	3	0	Oct.
Nov.	55.5	34.2	44.8	87	1950	0	1950	609	2.87	5.51	1946	1.5	10.5	1951	9.5	1951	5	0	1	14	0	Nov.
Dec.	44.5	26.1	35.3	75	1948	-10	1943	921	2.09	3.24	1942	3.7	13.5	1939	9.0	1943	5	0	5	23	1	Dec.
Year	67.3	44.8	56.1	114	1954	-16	1936	4735	37.54	5.51	1946	18.4	18.5	1947	12.0	1937	70	54	19	108	4	Year

(a) Average length of record, years.

T Trace, an amount too small to measure.

** Base 65°F

+ Also on earlier dates, months, or years.

* Less than one half.

NARRATIVE CLIMATOLOGICAL SUMMARY

The Missouri River forms the southern boundary of Warren County. Most of the terrain in the County is rolling or hilly, and much of the land is wooded. There are broad alluvial plains immediately north of the Missouri River and in the northern half of the county there are large sections of agricultural land. Warrenton lies in the north central part of the county. Weather observations from there are reasonably well representative of conditions in the rest of the county.

A little less than one-fourth of the average annual precipitation falls during the winter months of November through February. Below zero temperatures are not rare, but when they do occur, it is very unusual to have more than two such days in a row. During more than half of the winters, temperatures would fail to get as cold as zero. During the months of January and February there nearly always are some mild days, with temperatures getting above 50 degrees. In the thirty-year sample used in preparation of this summary, there was only one winter which received no snow. About half of the winters got more than 20 inches and about 10 per cent had as much as 30 inches of snow. It is very unusual for snow cover to remain on the ground for as long as a week.

With rising temperatures in the late spring, the likelihood for more abundant precipitation increases. The period April through June is the time of year when average rainfall is the highest. In most years, the loss of water by evaporation and transpiration from growing plants reaches a peak in June and July. In most years, by August the reserves of moisture in the top few feet of the soil are depleted.

Temperatures as warm as 90 degrees have occurred as early as April and as late as October. It is not unusual to have extreme temperatures as warm as 100 degrees. When this does occur, it is rare to have more than two or three such days in a row.

For data prior to 1931 write to:

James D. McQuigg
ESSA, Weather Bureau
State Climatologist
P.O. Box 941
Columbia, Missouri 65201

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Average Temperature (°F) WARRENTON, MISSOURI

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1931	37.2	42.0	39.8	56.2	61.9	78.1	81.7	76.0	76.3	61.9	53.7	44.4	59.2
1932	38.2	42.9	38.2	57.8	66.6	75.7	80.9	77.3	67.5	57.4	39.9	32.8	56.3
1933	43.2	33.4	44.1	54.8	66.4	79.8	80.9	76.7	76.5	56.8	46.7	39.3	58.4
1934	36.9	31.4	40.7	56.2	69.4	80.3	87.2	80.1	65.1	61.0	49.5	31.5	57.6
1935	33.7	37.5	50.4	51.7	60.2	69.1	79.1	76.6	68.6	57.8	42.7	29.7	54.9
1936	24.3	23.0	49.6	52.7	69.4	76.8	87.4	84.9	74.0	57.7	42.9	38.2	56.9
1937	29.1	32.3	40.2	55.1	65.7	73.5	77.0	80.0	69.9	56.5	41.4	30.6	54.4
1938	33.1	42.0	54.0	56.5	64.1	72.1	79.2	80.9	72.6	64.3	47.8	35.5	58.6
1939	39.5	33.9	48.1	53.5	68.0	74.6	79.0	73.8	74.3	60.1	42.7	37.8	57.3
1940	14.8	33.0	42.2	53.7	62.5	73.4	76.7	74.5	67.9	64.4	42.7	38.5	53.8
1941	33.9	31.7	40.7	59.3	69.5	75.2	79.7	80.2	71.9	61.6	46.6	40.6	57.7
1942	32.5	32.9	47.5	60.4	64.2	73.4	78.5	74.3	67.1	57.7	47.8	31.7	55.8
1943	31.2	38.9	39.8	55.3	62.9	75.2	79.4	78.9	64.8	56.7	42.6	29.7	54.7
1944	35.3	36.9	40.8	51.7	68.1	77.0	78.1	75.0	69.3	57.8	46.9	28.5	55.6
1945	27.8	35.3	53.6	56.2	60.4	69.4	73.3	75.9	68.9	55.9	44.9	26.9	54.1
1946	33.1	40.3	55.3	58.4	61.0	72.9	77.5	71.7	67.2	61.3	46.4	40.0	57.2
1947	34.8	28.2	36.1	54.6	62.3	72.1	73.4	82.9	71.3	64.6	39.6	37.9	55.0
1948	25.2	33.2	43.0	60.0	62.0	72.8	76.4	74.8	69.4	54.7	46.0	36.5	54.5
1949	31.3	35.2	43.6	52.8	66.7	75.0	79.3	75.4	63.1	50.1	49.2	39.5	56.1
1950	37.1	37.5	41.7	51.4	66.7	73.0	74.1	71.1	66.3	63.6	39.2	29.3	54.4
1951	33.6	36.5	41.0	53.3	66.7	71.7	76.4	75.7	66.4	59.5	39.8	33.2	54.6
1952	36.7	40.0	42.1	55.7	65.7	82.3	80.9	75.3	69.8	56.0	47.3	37.3	57.4
1953	36.2	42.6	47.1	52.9	66.3	80.5	80.1	77.8	73.8	62.2	47.6	38.6	58.9
1954	32.7	45.4	43.0	65.3	61.5	77.4	84.3	78.2	72.4	58.1	45.0	35.5	58.1
1955	32.5	34.4	44.4	61.9	66.7	69.1	80.8	79.3	72.4	58.9	42.7	32.9	56.5
1956	29.9	36.0	45.4	54.2	68.0	74.7	76.4	77.7	70.8	64.5	45.7	38.8	56.9
1957	27.1	40.5	42.8	56.6	66.3	74.4	78.3	77.6	66.5	53.6	42.9	40.3	55.7
1958	30.1	24.2	36.7	55.1	64.8	71.0	74.9	76.4	67.9	58.8	49.3	32.0	53.6
1959	27.2	35.3	44.7	55.5	67.7	73.4	75.1	79.0	70.2	55.6	38.2	39.4	55.2
1960	31.9	28.9	29.8	58.4	61.6	71.6	74.0	77.4	73.1	58.4	46.7	31.5	53.6
1961	30.0	37.4	45.9	--	61.8	70.9	75.9	74.4	69.3	59.0	43.6	30.4	----
1962	25.0	36.8	38.6	53.0	71.6	--	75.3	76.5	65.4	60.3	44.1	31.8	----
1963	20.6	29.5	47.3	59.3	63.8	76.2	78.4	75.6	69.7	68.3	47.2	23.3	54.9
1964	35.9	33.2	41.8	57.6	68.3	72.9	78.4	74.8	69.9	56.2	49.2	32.7	55.9
1965	32.8	34.4	35.0	58.3	70.1	73.2	75.7	74.6	68.2	57.5	49.4	42.8	56.0

Total Precipitation (Inches) WARRENTON, MISSOURI

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1931	0.48	2.21	3.23	1.77	5.16	2.68	1.33	4.57	6.50	4.51	3.99	2.22	38.65
1932	2.75	0.97	1.01	1.41	1.31	2.01	2.44	5.77	2.11	4.37	1.79	3.60	29.54
1933	3.15	1.59	5.22	2.97	9.05	0.36	1.50	0.92	4.11	2.75	0.60	2.09	34.31
1934	1.68	1.45	3.68	1.58	0.56	2.77	1.28	5.23	7.06	3.27	4.43	2.11	35.10
1935	2.80	2.21	4.79	2.97	7.64	7.80	7.60	1.45	4.02	2.35	5.65	1.01	50.29
1936	1.52	1.52	1.38	1.60	1.77	0.64	0.07	1.95	10.44	3.01	4.38	4.01	32.29
1937	5.37	1.90	1.96	4.37	3.63	9.23	2.76	0.94	0.97	2.39	2.14	2.94	38.60
1938	2.62	3.30	6.74	4.28	4.32	5.37	4.79	1.38	2.04	2.54	4.20	3.67	45.25
1939	2.39	4.27	3.30	7.52	4.07	8.09	4.49	5.14	0.51	1.21	4.87	1.61	47.47
1940	0.88	1.63	2.21	3.28	2.23	7.16	1.08	4.93	0.19	1.30	3.13	2.15	30.17
1941	3.78	0.70	1.03	6.98	2.69	3.33	2.76	2.87	6.52	11.63	2.21	1.48	45.98
1942	1.42	2.91	1.92	2.64	5.23	7.16	2.33	2.78	4.16	2.13	4.52	5.15	42.35
1943	0.71	0.77	2.99	2.68	12.17	6.57	2.62	1.65	4.73	3.84	2.27	2.16	43.16
1944	0.25	2.50	3.89	6.77	4.19	0.94	3.68	3.97	2.76	0.89	1.22	1.14	32.20
1945	1.08	2.70	6.97	6.55	3.12	5.95	2.07	0.29	12.97	1.15	0.97	1.44	45.26
1946	2.14	2.51	2.49	2.30	5.68	3.04	1.16	7.02	1.75	4.39	10.43	1.74	44.65
1947	0.45	0.18	3.73	6.06	4.10	6.96	1.87	0.08	3.73	4.06	2.79	2.00	36.01
1948	1.20	1.25	5.70	1.77	3.12	6.83	9.55	0.84	2.92	3.13	3.26	1.84	41.41
1949	5.05	2.72	3.06	1.32	4.43	5.50	4.90	1.92	5.49	5.87	0.04	4.65	44.95
1950	4.11	2.61	3.52	4.32	3.69	3.24	2.00	5.58	1.68	0.82	2.95	0.31	34.83
1951	1.96	5.54	3.61	2.77	1.73	9.61	3.75	4.38	5.31	3.29	2.58	1.65	46.18
1952	0.92	2.10	3.15	3.28	1.16	2.46	2.91	5.84	1.09	0.23	2.56	1.40	27.10
1953	1.77	0.89	4.22	3.39	2.37	2.98	3.88	0.80	1.07	1.24	0.80	0.56	23.97
1954	0.82	0.48	1.24	3.25	2.64	5.24	0.45	4.38	2.82	4.68	1.62	1.55	29.17
1955	1.37	3.39	1.77	2.99	2.72	5.41	1.84	1.34	4.04	3.53	0.85	0.35	29.60
1956	1.02	1.96	0.63	3.13	5.17	3.88	7.76	3.77	1.46	0.53	3.40	3.79	36.50
1957	0.81	2.84	3.13	7.57	6.92	5.80	4.43	0.25	1.75	3.04	1.63	2.45	40.62
1958	1.62	0.39	3.07	2.43	3.64	5.27	5.95	2.30	4.90	3.40	2.67	0.09	35.73
1959	1.62	1.83	2.49	1.18	2.94	2.88	5.39	2.84	2.89	4.72	1.64	2.40	32.82
1960	1.90	1.38	2.77	2.98	5.27	3.58	3.23	2.51	1.11	3.63	2.62	1.00	31.98
1961	0.90	1.64	5.11	3.70	5.08	2.47	6.95	2.28	8.61	2.46	2.43	1.40	43.03
1962	2.39	3.31	3.63	2.83	2.89	5.95	3.05	2.11	1.62	2.55	1.15	1.79	33.27
1963	0.25	T	5.01	1.87	5.22	1.05	1.48	2.84	1.71	1.60	2.12	1.21	24.36
1964	1.38	2.90	4.09	6.45	4.38	2.35	4.21	1.27	4.49	0.00	2.70	1.34	35.56
1965	0.92	1.43	1.35	5.00	1.32	2.71	3.01	7.83	5.22	1.05	0.41	4.42	34.67

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

Temperature As Cold As	SPRING MONTHS			FALL MONTHS		
	50%	20%	10%	50%	20%	10%
32°	Apr. 16	Apr. 23	Apr. 30	Oct. 19	Oct. 10	Oct. 4
28°	Apr. 3	Apr. 12	Apr. 17	Oct. 29	Oct. 18	Oct. 13
24°	Mar. 26	Apr. 5	Apr. 10	Nov. 9	Oct. 31	Oct. 26
20°	Mar. 12	Mar. 23	Mar. 30	Nov. 14	Oct. 23	Oct. 10
16°	Mar. 6	Mar. 17	Mar. 24	Nov. 24	Oct. 30	Oct. 17

STATION HISTORY

Date	LOCATION	ELEVATION	OBSERVER
10-1888/10-31-1921	Post Office	816	Prof. John H. Frick
11-1921/6-9-1942	" "	816	Prof. A. W. Eberling
6-10-1942/6-30-1942			Benj. F. Frick
7-1-1942/6-30-1944	1 Mi. SW	816	Dorris D. Brown
7-1-1944/6-30-1949	1-1/2 Blks. S	816	Wm. T. Zimmerman
7-1-1949/8-4-1955	1-1/4 Mi. N	845	Wm. T. Zimmerman
8-5-1955/9-30-1962	1.4 Mi. N	845	Wm. T. Zimmerman
10-2-1962/Present	1.4 Mi. N	845	Radio Station KWRE