

U. S. DEPARTMENT OF COMMERCE, WEATHER BUREAU  
 IN COOPERATION WITH THOMPSON FALLS-MOXON CHAMBER OF COMMERCE  
 CLIMATOGRAPHY OF THE UNITED STATES NO. 20 - 24

LATITUDE 47° 36'  
 LONGITUDE 115° 22'  
 ELEV. (GROUND) 2,380

CLIMATOLOGICAL SUMMARY

STATION THOMPSON FALLS, MONTANA

MEANS AND EXTREMES FOR PERIOD 1928-1957

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		32° and below	0° and below
(a)	25	25	25	30 <sup>x</sup>		30 <sup>x</sup>		30	30 <sup>o</sup>		17	17		22	30	23	19	24					
Jan.	33.7	13.0	25.9	58	1934	-36	1950	1210	2.05	.80	1943+	10.5	29.9	1943	10.5	1954	7	0	9	28	4	Jan.	
Feb.	39.3	20.5	29.9	61	1944	-30	1950	980	1.64	1.10	1951	8.6	25.0	1936	8.0	1936	5	0	6	26	2	Feb.	
Mar.	49.4	27.0	38.2	78	1952	-10	1955	830	1.96	1.13	1934	3.8	19.0	1932	15.0	1932	7	0	1	24	*	Mar.	
Apr.	61.6	32.9	47.3	90	1952	0	1936	530	1.43	.99	1943	.4	6.7	1929	4.0	1929	4	*	*	15	*	Apr.	
May	70.4	39.5	55.0	98	1936	20	1954	330	1.76	1.95	1957	T	T	1943	T	1943	5	1	0	4	0	May	
June	76.3	45.4	60.9	104	1936	29	1930+	160	1.94	1.47	1947	0	0		0		5	2	0	*	0	June	
July	88.4	49.5	69.0	109	1953	32	1929	20	.77	1.03	1940+	0	0		0		2	15	0	*	0	July	
Aug.	87.7	47.9	67.8	104	1953+	32	1928	30	.73	.99	1954	0	0		0		2	14	0	0	0	Aug.	
Sept.	76.9	41.6	59.3	106	1950	21	1928	210	1.12	1.21	1954	T	T	1934+	T	1934+	3	4	0	2	0	Sept.	
Oct.	61.3	34.9	48.1	89	1945	-2	1935	520	2.00	1.10	1942	.4	5.7	1930	5.2	1930	5	0	*	11	*	Oct.	
Nov.	43.9	27.4	35.7	65	1949+	-4	1935	880	2.08	1.55	1930	2.5	13.5	1946	6.0	1946	6	0	2	23	*	Nov.	
Dec.	37.5	24.1	30.8	61	1933	-15#	1932	1060	2.51	1.41	1933	7.8	16.5	1937	7.0	1937	8	0	6	26	1	Dec.	
Year	60.5	34.1	47.3	109	July 1953	-36	Jan. 1950	6760	19.99	1.95	May 1957	34.0	29.9	1943	15.0	Mar. 1932	59	36	24	159	7	Year	

(a) Average length of record, years.

T Trace, an amount too small to measure.

\*\* Base 65°F (estimated)

# Low for Dec. 25, 1944, was estimated at -22° but review indicates that that estimate is much too low.

+ Also on earlier dates, months, or years.

\* Less than one half.

x 10 months record missing during 30-year period.

o 19 months record missing during 30-year period.

CLIMATE OF THOMPSON FALLS, MONTANA

Located in the valley of the Clerk Fork, between Bitterroot and Cabinet Mountain Ranges, the Thompson Falls area has one of the more moderate climates of the Northern Rocky Mountain region in general. The city lies on the north bank of the river at an elevation averaging about 2,400 ft. above sea level. The river and mountain ranges in this area are aligned roughly in a NW-SE direction, the river flowing northward into Idaho. This alignment of valleys and mountains plays an important part in Thompson Falls' climate. The Bitterroot Range to the southwest shelters the area from much of the heavy precipitation that falls in the higher mountains during periods of moisture-laden winds from the Pacific Ocean. The Cabinet Mountains sometimes shield the area from cold winter air from Canadian sources. Too, with the prevailing wind flow in this general section being from the west or southwest, the area is sheltered from strong winds much of the time.

In its location near the western boundary of Montana, Thompson Falls weather seldom has the "Continental" characteristics of most of Montana East of the Continental Divide. As in nearly all cases of climate in mountainous areas, however, this climate covers a relatively small area. As near as about 20 miles downstream precipitation averages about 10 inches a year heavier, while upstream about 25 miles the annual average is 6 or 7 inches less. In general, too, climates run cooler both upstream and downstream--upstream because of increasing elevation and being closer to the area of "Continental" type climate; downstream to the Idaho line mostly because of more cloudy and rainy or snowy weather.

Precipitation is not heavy as a rule, but it averages more per year than most valley locations in eastern parts of the State. The wettest months are November and December as a rule, but there is a secondary maximum in June. August is the driest month, followed by July--although July can be rather wet on occasion. Precipitation is adequate for most purposes most of the time, but irrigation frequently is needed in July and/or August. Snowfall generally is less than 50 inches a year, and snow has fallen during at least a few years in all months except July and August. Heaviest snowfall month is January, but even in January some rain falls almost every year. From April through October most precipitation falls as rain. Snowfall in some parts of the nearby mountains can exceed 300 inches per year.

Winters around Thompson Falls have less severe weather than observed elsewhere in Montana, due mostly to the infrequent occurrence of cold air invasions from the north which strike much of the rest of Montana in most winters. However, winters otherwise are characterized by much cloudiness, and very little of the "Chinook" variety of winter warmth that often visits central parts of the State. As a result, Thompson Falls averages about the same degree of warmth, for example, as several points along the Yellowstone and Upper Missouri Rivers. Summers, on the other hand, while pleasantly warm, are not "hot" as such. While 100-degree temperatures can occur occasionally from late June through August, such occurrences are tempered by pleasantly cool nights, and by much clear and sunny weather from July into September during most summers.

Severe storms seldom occur, and tornadoes are unknown in this part of Montana. Thunderstorms with hail sometimes occur during the warmer months, but only infrequently are severe enough to cause other than very local damage. Floods along the Clark Fork can occur, but only rarely cause other than slight damage to lowland farms or crops, the river being mostly well-confined within rather high banks.

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THOMPSON FALLS, MONTANA  
Average Temperature (°F)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1928	25.6	28.2	36.4	42.0	56.4	59.0	67.8	62.8	56.6	--	33.7	21.5	--
1929	10.5	13.6	33.0	37.8	50.5	56.4	63.4	68.4	51.8	44.2	30.0	31.3	40.9
1930	8.8	33.3	35.4	48.6	49.9	56.3	68.0	67.6	65.5	41.1	31.0	25.2	43.3
1931	30.8	30.7	36.5	41.8	51.4	66.8	66.6	66.6	57.6	46.5	31.9	28.8	45.8
1932	25.8	22.2	33.2	46.4	53.1	61.6	67.4	67.2	57.6	47.8	40.2	23.0	45.9
1933	28.8	23.6	38.1	45.0	50.0	64.2	68.7	68.4	56.5	49.1	39.7	35.0	47.3
1934	35.1	37.1	45.0	53.6	59.6	62.4	69.8	68.4	56.0	49.4	44.8	33.0	50.9
1935	27.6	31.6	36.0	42.5	53.0	59.7	67.6	65.6	61.2	47.2	30.8	30.8	46.1
1936	30.2	13.0	37.1	49.0	60.6	65.5	72.2	69.4	58.4	50.7	31.2	33.6	47.6
1937	7.8	--	39.0	45.2	56.4	64.6	71.8	65.4	61.4	51.0	39.1	31.4	--
1938	28.6	28.1	38.8	48.2	53.5	64.7	71.6	66.8	65.6	50.2	33.3	32.4	48.5
1939	34.6	27.5	40.6	50.4	56.7	58.8	70.4	70.5	64.6	48.7	37.4	34.9	49.3
1940	24.8	34.2	43.2	51.8	59.0	65.8	70.8	70.2	51.8	51.8	31.0	31.8	49.7
1941	30.6	26.7	44.8	51.1	56.2	64.6	72.9	67.6	53.8	45.6	38.4	31.4	49.5
1942	21.4	28.9	39.0	49.0	52.5	58.0	70.0	69.6	61.2	49.0	36.0	33.2	47.3
1943	21.0	33.7	36.0	50.4	51.4	57.2	67.4	67.0	61.4	50.3	37.7	28.2	47.1
1944	30.4	35.0	36.9	48.4	56.8	62.0	67.6	66.0	61.6	53.0	27.0	27.0	48.5
1945	33.1	35.4	43.2	51.4	55.7	59.8	70.4	70.4	57.4	51.0	29.6	31.2	48.1
1946	31.1	35.4	43.0	49.4	56.8	60.0	70.5	69.0	58.8	51.8	37.4	34.5	48.5
1947	26.2	35.0	44.9	48.4	59.3	59.3	70.5	67.0	58.8	51.8	37.4	34.5	49.1
1948	30.0	30.2	35.4	45.0	55.1	65.0	65.4	65.5	60.3	47.4	36.5	25.7	46.8
1949	12.3	26.1	36.4	50.1	58.1	61.4	68.3	69.3	60.2	43.9	41.6	30.3	46.6
1950	9.8	28.7	35.9	45.3	51.8	60.2	68.0	68.3	66.2	46.9	41.6	30.3	46.5
1951	26.1	32.6	34.5	47.4	53.7	58.0	67.5	67.5	58.6	46.5	34.0	25.6	46.1
1952	24.4	32.6	37.8	--	57.1	61.4	68.7	68.9	61.1	50.9	35.1	31.5	--
1953	37.8	36.5	44.6	46.3	52.8	59.0	69.8	69.7	62.9	53.7	40.2	35.1	50.4
1954	27.0	28.4	34.8	--	49.6	58.4	66.9	65.5	59.1	--	--	30.6	--
1955	29.5	28.4	29.6	42.5	49.6	62.2	66.9	68.5	60.7	50.3	--	27.1	--
1956	29.5	25.1	35.6	46.3	56.5	60.4	69.2	67.3	59.0	47.3	34.2	31.4	46.8
1957	17.5	30.3	37.4	46.3	58.7	62.5	66.7	64.9	61.1	47.7	35.3	33.6	46.6

STATION HISTORY

The first official observation for Thompson Falls was taken August 1, 1911, by U. S. Forest Service personnel, and the record has been reasonably continuous (loss of an occasional month's record) to date. Aside from a few short moves of a few hundred ft. around 1/2 mile, the location has been quite stable. The first move, from the court house lawn to a site 1,300 ft. to the east, took place on October 17, 1932. There the instruments remained until June 30, 1949, when they were again moved, this time southwestward about 400 ft. On January 26, 1956, the instruments were again moved, this time to the Thompson Falls Power House about 3,500 ft. west and about 50 ft. lower than the preceding Forest Service site, and the station remains there as of May 1, 1958. To January 26, 1956, all observations were made by Forest Service personnel, and after that date, operators of the Montana Power Company have been taking the observations.

Having been in or very close to town since establishment in 1911, the records are considered representative of Thompson Falls. It should be noted that only the most recent 30 years of records have been used in this tabulation (1928-1957, inclusive). A few extremes occurred during the 1911-1928 period, most important of which appears to have been a minimum of -32° on December 12, 1919.

Total Precipitation (Inches)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1928	2.26	.25	2.83	2.02	.80	2.32	.71	.64	T	1.18	1.30	1.65	16.21
1929	1.97	.83	2.66	1.02	1.02	1.33	.0	.27	.19	1.07	1.20	1.65	15.85
1930	1.00	1.52	1.68	1.50	1.80	1.36	.38	.33	.81	1.28	2.46	1.60	15.72
1931	1.23	.74	2.36	1.01	1.87	1.03	.51	.21	1.98	.94	1.35	1.35	15.46
1932	1.47	2.45	3.42	1.01	1.26	.55	.74	.88	.52	2.86	3.93	3.45	25.54
1933	2.68	1.58	1.22	.95	1.77	2.79	.48	.93	1.96	4.79	1.55	8.50	29.20
1934	3.11	.44	4.79	.69	1.97	2.17	.12	.30	.79	4.05	2.03	2.03	22.55
1935	1.94	.36	2.52	2.29	.82	.55	1.48	.30	.27	.80	.78	1.32	13.39
1936	2.88	1.45	2.96	.95	1.11	2.36	.47	.54	1.00	.27	.38	1.64	16.01
1937	1.25	1.29	.74	2.10	.65	1.64	.71	.98	.53	1.37	2.54	3.34	17.14
1938	1.36	1.94	2.35	1.66	.88	1.85	.86	.54	1.07	1.85	1.95	1.64	17.95
1939	1.22	1.91	1.76	1.41	.68	1.61	.29	.25	.83	.94	1.94	2.58	13.42
1940	1.31	3.27	2.11	1.66	.64	.45	1.30	.11	2.15	1.46	2.85	1.34	18.65
1941	.72	.47	.51	1.08	3.85	2.25	1.30	.79	2.51	3.01	2.25	2.93	22.25
1942	1.11	.98	1.55	1.13	2.28	2.54	1.40	.70	.26	1.77	4.96	1.38	20.06
1943	3.61	1.05	1.84	2.30	1.93	2.83	.38	.49	.32	1.90	.73	1.36	18.74
1944	1.4	.61	.91	1.04	1.64	2.87	.17	.38	2.08	.65	1.05	.96	12.50
1945	2.12	1.37	1.56	3.34	2.03	1.94	T	.84	2.71	1.31	3.03	3.03	24.08
1946	2.49	1.19	1.95	.80	.79	.88	.58	.94	1.01	3.55	3.71	3.71	21.45
1947	1.55	1.58	2.04	.94	1.08	4.01	.72	1.24	2.35	3.54	2.13	1.45	22.63
1948	1.65	2.59	1.73	2.39	4.45	3.94	2.52	.54	.26	.80	3.41	2.17	26.45
1949	.51	3.10	1.28	.90	1.51	.76	.87	.60	1.46	2.05	2.95	3.51	19.50
1950	4.71	2.25	2.76	1.67	.84	2.86	1.36	.63	.77	4.36	2.79	2.25	27.25
1951	2.97	3.44	1.03	1.53	2.55	1.53	1.04	1.29	.93	3.29	2.16	1.89	23.65
1952	.91	1.17	.44	.48	.92	3.42	.44	.79	.23	.13	.38	1.03	9.74
1953	7.30	1.96	.48	2.04	2.90	1.15	.0	1.07	.42	.32	1.96	2.76	22.36
1954	4.27	1.98	1.47	2.17	.37	1.84	1.44	2.77	2.55	1.38	1.19	1.39	22.82
1955	.49	2.07	2.94	.96	1.40	1.94	1.32	.02	1.94	4.06	4.28	4.04	25.46
1956	1.65	2.44	2.70	1.43	1.33	1.49	1.01	1.73	1.08	1.11	2.80	2.80	21.26
1957	1.68	2.91	2.25	1.55	3.73	1.90	.84	.34	.49	2.96	.49	3.49	22.63

E - Estimated