

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

LATITUDE 45° 11' N  
 LONGITUDE 109° 15' W  
 ELEV. (GROUND) 5,575 Ft.

CLIMATOLOGICAL SUMMARY

STATION RED LODGE, MONTANA

MEANS AND EXTREMES FOR PERIOD 1926-1955

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	#					Maximum monthly #	Year	Greatest daily	Year		90° and above	32° and below	32° and below	0° and below			
																						Max.		Min.
(a)	30	30	30	30		30		30	30	30														
Jan.	32.1	9.3	20.7	70	1953	-38	1930	1373	.83	1.12	1949	13.0	50.0	1948	12.0	1948	3	0	14	30	8	Jan.		
Feb.	34.9	11.4	23.2	70	1935	-37	1936	1181	.77	0.77	1955	12.2	24.5	1953+	10.0	1928	3	0	11	28	6	Feb.		
Mar.	39.5	16.2	27.9	70	1953	-30	1945	1150	1.69	1.61	1945	20.5	53.0	1955	11.5	1946	5	0	8	30	4	Mar.		
Apr.	51.2	27.5	39.4	80	1939	-10	1945+	768	2.21	2.40	1931	16.5	48.0	1953	22.0	1953	5	0	2	21	1	Apr.		
May	60.5	36.3	48.4	88	1936	7	1943	515	2.96	2.39	1944	6.0	28.0	1943	16.0	1958	7	0	*	9	0	May		
June	67.1	42.8	55.0	94	1926	25	1951	316	3.11	2.35	1937	1.1	10.0	1943	8.0	1943	7	*	0	2	0	June		
July	78.2	50.0	64.1	101	1931	30	1955	106	1.43	1.97	1951	0	0		0		4	2	0	*	0	July		
Aug.	76.1	48.0	62.1	96	1934	29	1932	138	1.24	1.56	1928	0	0		0		3	1	0	*	0	Aug.		
Sept.	65.8	39.5	52.7	90	1950+	8	1926	374	1.80	2.08	1941	2.0	8.0	1934	5.5	1950	4	*	*	6	0	Sept.		
Oct.	56.3	31.9	44.1	80	1954	-3	1935	648	1.41	1.75	1946	7.8	34.5	1949	13.0	1946+	4	0	1	16	*	Oct.		
Nov.	42.9	20.7	31.8	73	1953	-24	1929	996	1.04	1.00	1927	11.5	36.5	1929	12.0	1927	4	0	6	27	2	Nov.		
Dec.	36.3	14.4	25.4	68	1939	-35	1932	1228	.66	0.67	1947	10.7	30.5	1955	13.0	1955	2	0	11	30	5	Dec.		
Year	53.4	29.0	41.2	101	July 1931	-38	Jan. 1930	8793	19.15	2.40	April 1931	101.3	53.0	March 1955	22.0	April 1953	51	3	53	199	26	Year		

(a) Average length of record, years.      \*\* Base 65° F.      + Also on earlier dates, months or years.  
 † Trace, an amount too small to measure.      \* Less than one half.  
 # Hail was included in these values from July 1948 through December 1955.

CLIMATE OF RED LODGE, MONTANA

Located just west of Rock Creek, where East Bench begins a rather sharp rise to the southwest, Red Lodge experiences in several ways a rather unique climate. To the northeast the Rock Creek Valley floor (which is part of the flat area known as East Bench) is relatively flat and several miles wide, while to the southwest the creek flows through rugged mountain country. These mountains, eastward extensions of the main Absaroka Range, are among the highest in the Rocky Mountains, and several peaks of over 12,000-ft. elevation lie within 30 miles of Red Lodge. Granite Peak, highest in Montana at 12,850 ft., is less than 30 miles due west of the city. The so-called Cooke City Highway southwest of Red Lodge crosses Beartooth Pass at an elevation of 10,940 ft. just across the border into Wyoming. Red Lodge itself has an elevation of 5,554 ft. in the main part of the city (the weather station currently is in one of the town's highest parts). The country slopes gradually downward to the Yellowstone River some 50 miles to the northeast, but rises rather abruptly toward the mountains to the southwest.

In its unique location with respect to Montana's topography, the Red Lodge area has a climate pretty much its own. Being on the northeast slope of the Rockies where winter "chinook" winds occur a few times every year, the climate may be described in broad terms as modified continental. Characteristic of mountain climates, the weather experienced in Red Lodge is not necessarily representative of that prevailing a few miles away in any direction. Topography here plays a major part in the climate, and variations in annual average rainfall may be very large within a few miles.

Precipitation in the area from the north through east to southeast of the city on the average is less than Red Lodge's, but the country from southeast through southwest to north is somewhat wetter. The 19.15-inch Red Lodge average furnishes ample moisture for most nearby needs, over half that amount usually falling during the four important early growing season months April through July. On the other hand, some of Montana's driest country lies along the Clark Fork of the Yellowstone near the Wyoming border—some 15 to 20 miles southeast of Red Lodge, and points east through north similar distances from the city are also usually drier. On the

other hand, much of the mountain country to the southwest is wetter. At Red Lodge, winter precipitation almost always falls as snow, and while snow can fall as late as May or as early as September, these off-season snows usually don't last very long. The ground ordinarily is snow-covered near the city during most winters. Temperatures in the area can vary considerably with distance and elevation, so the records tabulated in this summary will not be representative of conditions much beyond the immediate vicinity. In general, though, the higher country to the southwest runs cooler, and the lower country to the northeast a little warmer. The main exception to this general rule occurs on clear, still mornings, when the flat country to the northeast can experience cooler minimums than Red Lodge or the surrounding higher country.

Summers around Red Lodge are pleasantly cool, temperatures as high as 100° occurring very seldom, and daytime maximums for that season running usually between 70° and 80°. Summer nights are cool, early morning lows for the season averaging from 40° to 50° most of the time—cool enough to sleep under blankets and keep the days from getting hot. Summertime precipitation usually falls as afternoon showers, but in late spring or early summer most years will have one or two steady rains lasting for a day or two. Humidity becomes high only during these storms and once in a while in the cool hours of an early morning, but oppressive combinations of heat and humidity are unknown. Sunny weather prevails most of the summer. Winters are cold, but extreme conditions as recorded in colder parts of the nation don't occur in Red Lodge. In fact, the coldest in 56 years of records was -40° on February 3, 1899. Cold spells occur every winter, but the modifying effect of Red Lodge's location along the northeast slope of the Continental Divide usually prevents these spells from lasting more than a few days. The warmest ever observed was 101° on July 21, 1931.

R. A. Dightman, State Climatologist  
 Weather Bureau Airport Station  
 Helena, Montana

Total Precipitation (Inches)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1926	0.31	0.87	1.63	0.96	2.53	1.16	2.13	1.49	4.93	0.39	0.92	0.71	18.03
1927	0.82	0.60	0.80	3.03	4.66	2.15	1.17	2.66	2.66	2.47	2.95	0.58	20.77
1928	1.33	0.79	0.92	1.29	1.29	4.60	2.52	2.69	1.50	2.47	0.94	0.72	19.80
1929	1.36	0.97	0.92	2.79	2.19	1.61	1.07	1.32	1.80	1.54	3.04	0.41	16.95
1930	0.33	0.87	1.75	2.79	0.92	0.82	1.43	2.84	0.56	1.63	0.77	0.40	12.36
1931	0.29	0.49	0.78	3.49	2.92	1.28	1.50	0.56	2.45	1.15	0.53	0.21	15.65
1932	1.50	0.67	1.84	2.16	2.92	5.40	1.25	0.98	0.98	3.25	0.99	0.84	22.35
1933	0.79	0.73	0.87	3.11	2.58	0.79	0.07	2.93	0.45	0.70	0.72	0.54	14.28
1934	0.05	0.73	1.90	0.58	1.54	4.13	2.37	0.35	1.08	0.40	0.64	13.77	19.34
1935	0.12	0.13	1.63	2.04	3.68	0.89	1.39	1.30	0.38	0.67	0.35	0.12	12.70
1936	0.48	0.43	1.03	1.66	0.08	3.20	1.13	1.64	1.74	2.39	0.44	0.42	14.64
1937	0.29	0.82	1.42	0.76	1.94	5.90	1.25	1.42	1.42	1.52	0.37	0.80	16.49
1938	0.51	0.30	1.10	1.19	4.24	3.60	0.90	0.64	0.64	2.22	0.82	0.22	16.07
1939	0.32	0.54	1.73	1.62	3.40	4.30	0.49	2.21	0.36	1.00	0.00	0.38	16.55
1940	1.09	0.45	0.54	4.63	1.13	3.72	0.84	0.82	3.03	1.64	1.12	0.39	19.40
1941	0.09	0.61	0.75	4.50	2.11	4.53	1.69	1.36	4.86	1.42	0.87	1.24	24.03
1942	0.64	0.54	1.08	1.59	7.65	1.57	1.13	0.84	2.71	3.07	2.00	0.43	23.25
1943	1.55	0.68	1.48	2.21	3.92	2.37	0.46	1.44	1.20	1.33	0.65	0.49	17.78
1944	0.64	0.82	1.33	2.12	2.97	10.24	4.23	0.61	2.45	0.57	0.88	0.97	27.83
1945	1.11	0.89	2.62	2.90	3.30	5.34	0.58	1.61	2.69	0.33	1.11	1.45	23.93
1946	0.97	0.66	2.81	0.65	4.88	2.73	0.99	0.79	2.38	3.65	1.54	0.84	22.79
1947	0.70	2.14	2.29	2.77	3.57	2.81	0.62	0.62	2.38	1.24	2.65	0.82	22.57
1948	4.06	0.99	1.86	1.00	3.51	4.08	1.81	1.01	1.01	0.11	0.64	0.72	20.60
1949	2.13	0.22	1.63	2.27	2.72	3.12	0.30	2.28	2.89	2.89	0.13	0.58	19.00
1950	1.42	0.06	1.45	3.81	2.83	2.42	1.71	0.57	4.30	0.32	2.76	0.73	22.38
1951	0.76	0.56	1.05	2.97	1.71	3.55	3.41	1.42	2.48	1.99	0.45	1.34	21.69
1952	0.17	1.39	2.07	2.44	5.93	1.43	1.50	1.91	1.21	0.55	1.26	0.12	19.98
1953	0.14	1.73	1.38	5.15	2.03	1.55	0.30	1.85	1.36	1.18	0.56	0.20	18.30
1954	0.94	0.23	3.78	1.11	1.85	1.21	1.14	1.33	1.57	1.85	0.06	0.22	15.27
1955	0.10	2.44	4.83	1.47	3.96	3.41	0.55	0.26	1.60	1.19	1.75	1.72	23.28

RD LODGE  
Average Temperature (°F)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1926	23.7	29.3	28.1	38.5	50.8	56.2	64.3	61.0	44.6	44.5	33.4	21.2	41.3
1927	18.6	29.7	29.8	35.1	42.2	55.0	65.2	64.2	50.0	46.4	30.4	13.1	38.5
1928	24.4	19.5	30.8	35.2	53.1	60.6	61.9	58.3	51.2	40.3	30.8	22.5	39.8
1929	9.5	13.0	28.4	34.8	44.7	53.8	62.9	65.7	49.5	42.6	23.5	28.9	37.5
1930	5.4	11.1	24.4	45.0	46.4	53.4	64.5	61.2	49.7	35.5	31.2	28.9	39.7
1931	26.9	30.2	29.0	39.7	48.4	59.7	66.2	64.4	54.4	44.2	28.2	25.4	43.1
1932	15.4	23.6	19.5	39.6	48.9	55.4	62.9	63.0	53.4	37.7	34.8	16.0	39.2
1933	22.0	15.3	33.8	35.2	45.4	62.2	66.6	63.0	53.2	46.0	37.1	31.4	42.6
1934	31.0	29.6	31.6	45.1	56.6	56.4	66.0	62.6	48.0	48.5	38.3	26.7	45.0
1935	22.6	30.2	26.6	35.0	43.8	54.9	66.0	62.2	55.6	47.4	27.9	30.9	41.4
1936	21.4	5.4	29.6	37.5	56.4	61.0	70.8	64.8	55.0	42.9	32.1	23.6	41.7
1937	2.4	18.8	26.6	36.7	52.0	55.5	65.0	63.8	56.4	47.0	31.2	24.6	40.2
1938	24.9	25.3	31.4	39.2	46.2	57.8	61.0	61.0	59.8	45.0	28.9	25.0	42.0
1939	27.6	13.1	30.2	42.4	52.4	53.0	65.8	62.2	55.8	44.2	29.0	32.8	43.2
1940	15.6	24.2	33.2	36.8	51.8	58.0	65.4	63.7	57.0	47.0	25.5	26.3	42.0
1941	26.7	25.8	30.4	38.2	51.2	56.7	63.6	61.1	40.6	40.6	35.7	23.3	41.6
1942	19.0	15.1	26.2	41.6	43.4	51.4	62.8	60.8	42.1	42.1	28.7	27.9	39.2
1943	14.0	26.3	19.0	45.6	43.4	52.0	63.8	62.2	53.2	46.8	35.4	26.4	40.7
1944	24.3	19.6	22.9	40.6	50.3	51.4	61.0	58.6	52.1	48.7	30.6	22.2	40.1
1945	24.8	20.2	28.8	32.2	44.6	50.0	61.0	61.0	51.0	47.0	30.6	23.4	39.7
1946	26.0	27.0	35.4	46.4	45.2	56.3	65.4	61.6	52.0	37.0	30.0	29.1	42.6
1947	24.0	22.8	27.3	38.7	49.6	52.2	67.0	64.5	52.8	47.6	25.4	26.5	41.6
1948	24.2	20.0	24.9	40.9	49.6	55.6	61.8	63.2	56.0	46.0	29.6	19.9	41.0
1949	10.6	18.4	28.7	46.3	51.9	54.8	63.0	64.2	52.0	37.0	42.9	23.3	41.1
1950	12.9	30.5	28.0	37.5	43.4	53.4	58.6	59.5	51.2	47.3	30.3	31.3	39.9
1951	18.1	26.0	23.7	36.9	49.3	49.3	62.7	60.0	49.5	40.5	31.4	18.4	38.8
1952	22.6	27.2	26.6	44.4	48.7	57.0	61.2	62.3	58.3	49.4	30.4	30.4	43.2
1953	35.9	28.2	36.2	35.2	46.8	57.3	66.0	63.9	57.1	50.7	41.2	28.7	45.6
1954	21.3	36.6	24.2	37.5	47.9	53.8	67.0	61.9	54.1	44.5	29.9	21.4	43.1
1955	23.1	19.7	22.0	39.1	48.4	54.8	64.2	65.6	52.7	47.6	21.2	24.5	40.2

STATION HISTORY

Weather records for Red Lodge have been kept by only three people, Mr. Keyser Brown, Mr. Wm. McIntyre, and Mr. Irwin A. Draper. By far the longest period of observations has been during the tenure of Mr. Draper, who started on December 1, 1902, while he still was in his teens, and who still carries the responsibility of the station. Mr. Brown took observations in town for about seven months in 1894, and Mr. McIntyre had the station for six years 1895-1900. The station, when Mr. Draper took over, was located at the Draper ranch about five miles northwest of the city at an elevation of 5,254 ft., and there it remained until Mr. Draper moved to Red Lodge on November 18, 1945, since when it has been located at his residence at 409 North Word Street.

Details about exposure and location for the first two observers are lacking, but apparently the station was in town. At the Draper ranch beginning in 1902 the exposure was good, and the records have always been of very high quality. While the move to the city in 1945 changed the character of the station and the record to some degree, the larger scale features of the two sites have shown few important differences. Mr. Draper always had help from family members in keeping a remarkably complete record in spite of his absences for college, travel, hospital care, etc. As of December 1, 1955, Mr. Draper completed 53 years as an observer cooperating with the U. S. Weather Bureau.

