

U. S. DEPARTMENT OF COMMERCE, WEATHER BUREAU
 ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
 IN COOPERATION WITH COOPERATIVE EXTENSION SERVICE
 CLIMATOGRAPHY OF THE UNITED STATES NO. 20 - 24

LATITUDE 48° 31'N
 LONGITUDE 110° 57'W
 ELEV. (GROUND) 3140

CLIMATOLOGICAL SUMMARY

STATION CHESTER, MONTANA

MEANS AND EXTREMES FOR PERIOD 1943-1964 (22 years)

Month	Temperature (°F)									** Mean degree days	Precipitation Totals (Inches)						Mean number of days						Month		
	Means			Extremes			Record highest	Year	Record lowest		Year	Mean	Greatest daily	Year	Snow, Sleet			Precip. .10 inch or more	Temperatures						
	Daily maximum	Daily minimum	Monthly	Year	Year	Year									Mean	Maximum monthly	Year		Greatest daily	Year	90° and above	32° and below		32° and below	0° and below
(a)	22	22	22	22	22	14	22	22	14	22	22	22	22	22	22	22	22	22	22	22	22	22	22	JAN.	
JAN.	28.1	.6	14.4	65	1944	-57	1950	1605	.31	.39	1943	4.5	10.0	1943	7.0	1959	1	0	16	31	16	JAN.			
FEB.	34.3	6.2	20.3	67	1962	-43	1956	1253	.28	.62	1958	3.2	7.0	1953	8.0	1958	1	0	10	28	10	FEB.			
MAR.	40.4	13.4	26.9	76	1943	-38	1951	1190	.23	.33	1964	3.1	8.0	1947	4.0	1947	1	0	8	30	7	MAR.			
APR.	58.5	27.1	42.8	86	1952	-5	1954	714	.68	.67	1960+	1.6	12.0	1955	5.0	1955	2	0	1	21	*	APR.			
MAY	68.4	37.6	53.0	92	1958	-8	1946	375	1.53	1.45	1953	T	T	1954+	T	1953+	4	*	*	8	0	MAY			
JUNE	74.5	44.6	59.6	97	1961	28	1949	171	2.45	1.45	1954	T	.5	1950	.5	1950	7	1	0	9	0	JUNE			
JULY	84.7	49.5	67.1	103	1960+	31	1958	56	1.36	1.19	1956	0	0	-	0	-	4	10	0	*	0	JULY			
AUG.	83.2	47.5	65.4	105	1961	28	1946	72	1.08	1.29	1951	0	0	-	0	-	3	6	0	*	0	AUG.			
SEP.	72.1	37.6	54.9	97	1963+	13	1959+	309	.79	.93	1947	T	1.1	1945	1.1	1945	2	1	0	7	0	SEP.			
OCT.	61.3	27.8	44.6	90	1943	2	1951+	636	.45	.69	1957	.7	5.5	1946	8.0	1957	2	*	1	22	0	OCT.			
NOV.	43.3	14.7	29.0	74	1952+	-32	1946	1069	.33	.52	1960	3.9	14.0	1958	8.0	1958	1	0	6	28	5	NOV.			
DEC.	32.3	5.3	18.8	64	1943	-42	1964	1427	.35	.39	1964	3.3	12.7	1951	4.0	1963	1	0	12	31	12	DEC.			
Year	56.8	26.0	41.4	105	Aug. 1961	-57	Jan. 1950	8877	9.84	1.45	June 1954+	20.3	14.0	Nov. 1958	8.0	Nov. 1958+	29	18	54	215	50	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

CLIMATE OF CHESTER, MONTANA

Located in North-Central Montana some 57 miles west of Havre and 65-70 miles north of Great Falls, along the northern edge of the so-called "Golden Triangle", Chester climate is in many ways typical of the high plains country along the eastern slopes of the Continental Divide. The ridge of the Continental Divide itself runs north-south, at its closest point, only about 100 miles west-southwest of Chester, and the slope in the general area is downward gradually to the east. This geographical complex is extremely important to Chester's over-all weather picture, and results in a climate much less continental in character than in areas only a few hundred miles to the east. The Rocky Mountain barrier to the west (including many complex lateral mountain structures) separates the area very efficiently from the "Pacific" weather types experienced much of every cold season in Western Montana and Northern Idaho.

Annual temperatures here average a little cooler than most of Montana's weather stations, but the difference is not large. Summers are mostly warm and pleasant, and oppressive combinations of heat and humidity are very rare. Winters, while they have some cold weather every year, still are not as cold as one might expect at this (48+) latitude. In this area of Montana, however, the so-called "Chinook" wind (called "Foehn" in most climate textbooks) is an important winter weather modifying effect. Classically, this cold season wind occurs following a couple of days of subzero cold, and may result in temperature rises of 40° or 50° in a few hours (from below zero to near or above 32°). Usually it occurs several times each winter, and sometimes may last for days. On the other hand, it may occur on occasion preceding an invasion of polar air from Arctic or Northern Canadian sources, and changes from the 40-50° range to below zero within a few hours, while not common, may occur a few times almost every winter. These cold air invasions generally come on northerly winds with snow and blowing snow, but precipitation amounts in them are usually small. Midsummer afternoons usually warm to the mid- or lower 80's most days, but at night it cools rather consistently to 50° or a little less during the three summer months.

Precipitation is almost always light during the cold half of the year, but warm season moisture is adequate for a quite well developed dry-land agriculture in most years (8 or 9 out of 10). Actually, 7.89 inches (80 per cent) of the annual average 9.84 inches, falls during the April-September growing season, and one-fourth (2.45 in.) falls during the important early

growing season month of June. Winter snowfall is much lighter, on the average, than most of the rest of Montana, and matches the low cold season precipitation averages. Greatest snowfalls, as the above table shows do not occur in December or January; the favored months for heaviest snowstorms are in late fall or late winter. The seasonal precipitation maximum, centered on June, is pronounced, but days with an inch or more may occur in any month of the warmer half of the year.

The area experiences much clear, sunny weather during all seasons, but mostly during the warmer 6 months. Most summer days dawn bright and sunny, but afternoon clouds often will appear and turn skies to partly cloudy or cloudy by early afternoon. From mid-June to mid-August this afternoon cloudiness sometimes grows to thunderstorm-producing proportions, and thunderstorms may occur in some summers on 20 to 30 afternoons, but thunderstorm occurrences may range from about 10 to 35 days over a period of years. The area's most troublesome storm type is associated with these thunderstorms - hail. Hailstorms are not frequent (many thunderstorms produce little if any hail), but occur often enough to be a real hazard to ripening grains late June and July. While some crop damage from hail is reported somewhere in Liberty County in most years, really heavy and wide area hailouts are not common, and in some cases the hail moisture outweighs in value the crops damaged. Over the years hail appears to be a little more of a problem south of Chester than to the north - with the possible exception of around the mountains in the northwest corner of the county.

Other types of storm can and do occur from time to time, but no type occurs frequently. Blizzard conditions sometimes develop with cold waves, but this storm type is not as serious as in earlier years when capabilities for handling it were more limited. "Chinooks" sometimes attain very high speeds (on occasion gusts near 100 mph have been reported in the area) but over the years residents have become accustomed to them. In the immediate Chester area, really heavy rains have not occurred in the period of record (about 22 years), so they must be uncommon here. Such things as heavy fog, heavy ice storms, or damaging tornadoes are rare.

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CHESTER, MONTANA
Average Temperature (°F)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1943	4.2	27.8	24.2	53.4	52.3	58.4	72.4	67.4	58.8	50.7	-	26.8	-
1944	27.6	23.6	25.1	48.2	57.7	60.0	67.2	64.6	57.4	50.6	26.8	21.0	44.2
1945	18.9	19.8	33.6	37.8	50.7	57.0	69.0	66.4	51.0	45.8	24.2	13.7	40.6
1946	20.4	19.1	37.6	46.6	49.2	57.9	65.2	62.4	51.4	35.8	18.1	14.6	39.9
1947	16.8	18.1	23.9	45.4	54.4	59.0	72.0	65.9	55.2	-	26.8	24.8	-
1948	25.6	15.0	24.6	42.8	55.5	62.5	66.7	-	45.7	33.0	12.9	-	-
1949	4.5	9.5	29.2	50.3	56.7	57.4	63.6	69.6	56.9	42.5	39.8	15.2	41.2
1950	-	25.6	-	-	52.7	60.0	65.6	-	54.7	44.7	27.7	22.2	-
1951	9.8	16.3	16.6	41.4	53.9	55.2	68.0	63.2	52.4	37.4	-	8.4	-
1952	6.6	18.4	18.7	49.3	55.3	60.1	64.8	66.3	45.9	45.9	29.5	25.0	41.5
1953	24.2	27.8	27.8	37.0	49.0	58.1	66.2	66.2	57.5	47.5	35.5	24.0	43.8
1954	1.0	33.1	22.2	34.4	52.9	55.9	68.1	64.1	53.6	42.4	39.6	27.2	41.0
1955	15.5	17.0	20.5	38.6	-	61.0	65.0	65.6	52.4	44.5	14.1	9.5	-
1956	7.1	10.8	26.8	38.4	52.3	61.0	65.2	61.7	56.2	43.0	30.8	22.4	39.7
1957	.3	15.6	31.1	42.1	55.9	59.9	68.5	63.9	55.8	37.0	50.5	28.6	40.8
1958	26.2	16.4	21.7	42.5	59.4	57.4	68.5	68.5	56.5	46.2	27.0	17.9	41.8
1959	11.9	8.7	34.2	42.3	47.5	61.4	67.1	62.6	51.6	41.1	25.0	27.7	40.1
1960	12.9	16.6	25.6	39.9	51.0	60.3	71.8	63.3	55.7	45.3	26.9	18.1	40.6
1961	23.1	29.7	34.8	37.9	53.8	66.6	69.1	71.6	49.5	43.7	24.3	9.7	42.8
1962	16.2	18.2	22.2	46.2	50.5	62.3	64.0	65.0	54.5	49.2	35.5	27.0	42.6
1963	9.0	30.3	26.2	42.7	52.6	60.5	66.3	67.6	60.6	51.0	30.7	15.5	43.6
1964	21.7	29.0	28.0	42.0	53.0	61.0	68.7	63.2	51.2	46.0	28.9	1.9	41.1
1965	10.4	17.5	16.0	39.0	50.0	58.3	66.7	65.0	44.2	47.9	26.2	20.7	38.5

STATION HISTORY

Records started originally in Chester on June 1, 1900 in care of Mr. B. B. Weidly. Earlier records, however, were not continuous; therefore this summary is based upon that section of record from 1942 through 1965 because of the 22-year break dating from 1920. Observers and dates of service are listed:

B. B. Weidly	6/1/00 - 7/31/09	H. B. Wolf	11/18/16 - 5/31/17
E. D. Keith	12/10/10 - 3/21/13	J. O. Berglin	5/22/18 - 9/30/18
C. F. Baker	4/1/13 - 1/31/15	F. A. Pike	5/1/19 - 5/12/20
A. H. Boone	2/1/15 - 4/30/16	J. W. Hutchison	8/22/42 - 5/10/50
S. H. Wiles	5/1/16 - 10/31/16	I. G. Hutchison	5/11/50 - Present

All observations, according to the records, have been made at or near the center of Chester. Some of the earlier names may be known to long-term residents of the Chester area. Presently, the station is located adjacent to the Liberty County Times, and the publisher is the present observer.

Prepared under the direction of:
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Weather Bureau Airport Station
Helena, Montana

CHESTER, MONTANA
Total Precipitation (Inches)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1943	.60	T	.18	.80	.52	4.80	1.39	.28	.02	.42	.11	T	9.12
1944	0	.31	.53	.79	.89	1.78	.59	1.58	.02	T	.59	.08	7.16
1945	.36	.07	.12	.59	1.59	2.36	.28	.54	1.75	.51	.04	.17	8.38
1946	.12	.17	.24	.46	.80	2.08	2.94	.56	1.76	1.48	.15	.28	11.04
1947	.08	.20	.45	.12	1.18	2.37	.38	1.34	1.86	.37	.04	.07	7.46
1948	.53	.16	.17	.45	1.63	3.50	1.16	-	-	.02	.58	-	-
1949	.08	.06	T	.25	2.05	.78	-	.14	0	0	0	.20	-
1950	-	0	.50	.35	.58	2.11	2.11	-	.17	.26	.32	.45	-
1951	.24	.13	.40	.28	1.67	2.41	1.33	3.77	1.43	1.21	1.27	-	7.37
1952	.35	.23	.52	.08	1.67	1.26	1.19	.65	.99	.01	.16	.08	11.80
1953	.44	.35	.41	1.59	3.89	2.85	.05	.99	.53	.01	T	.73	11.80
1954	.72	.16	.48	.86	.92	4.05	1.26	2.00	2.31	.49	.02	.10	13.37
1955	.19	.09	.05	1.84	3.45	1.47	4.20	0	.23	.10	.55	.45	12.62
1956	.36	.20	.09	.35	1.85	2.89	2.12	1.92	.40	.35	.03	.34	11.08
1957	.52	.20	.06	.50	1.87	2.52	.23	1.87	1.27	1.34	.13	0	9.06
1958	.14	2.00	.16	.10	.72	4.51	2.54	.62	.41	1.21	.59	.09	13.70
1959	.44	.27	.03	1.10	2.14	3.76	.17	1.01	.73	.74	.90	0	11.29
1960	.29	.27	.05	2.47	1.94	.64	.37	1.72	.18	.05	.52	.34	8.82
1961	.15	.31	.41	.84	2.54	.52	1.25	.34	.64	.23	.47	.06	7.76
1962	.10	.38	.16	.12	1.60	1.29	1.65	.63	.22	.78	.51	.01	7.45
1963	.49	.45	0	.58	.47	3.03	1.17	.81	.58	.34	.09	.59	8.60
1964	.21	.05	.74	.49	2.39	3.01	2.30	.80	.97	.23	.60	1.54	13.33
1965	.46	.24	.39	.63	.44	5.34	1.84	1.71	.97	0	.56	T	12.58

FREEZE DATA

Freeze dates (average last in spring and first in fall) have not been computed for Chester, but considering the character of the country and some of the nearby points where freeze dates have been figured, it is estimated that the average date of the last 32° freeze in the spring is within a few days of May 25. Similarly, the average first date of a 32° freeze in the fall is estimated at about September 15. Using these two dates we come up with an average growing season length between 32° temperature occurrences of 113 days - nearly four months.

PRECIPITATION NOTE

Over the years considerable precipitation information has accumulated, permitting various kinds of tabulations such as those listed in the precipitation columns above and on the reverse. An additional item of some value is a 10-year count of the number of days, by month, with .10 inch or more and .50 inch or more:

	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	YEAR
.10 or more	2	1	#	4	5	7	3	4	2	2	1	33	
.50 or more	0	#	0	#	1	2	1	#	#	#	0	5	
# = less than 1													

An average year, then, will have only 5 days with .50 inch or more.