U. S. DEPARTMENT OF COMMERCE, WEATHER BUREAU
IN COOPERATION WITH Chico Chamber of Commerce
CLIMATOGRAPHY OF THE UNITED STATES NO. 20 — 4

LATITUDE 39° 42' N
LONGITUDE 121° 47' W
ELEV. (GROUND) 230 feet

CLIMATOLOGICAL SUMMARY

STATION Chico, California

MEANS AND EXTREMES FOR PERIOD 1930-1959

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.	53.5	35.7	44.6	75	1948	12	1937	620	4.98	2.85	1956	0.5	11.0	1937	9.0	1937	7	0	0	12	0	Jan.
Feb.	59.1	38.4	48.8	80	1932	20	1956+	450	4.38	2.20	1940	T	T	1949+	T	1949+	7	0	0	7	0	Feb.
Mar.	65.2	40.9	53.1	89	1930	24	1951+	370	3.27	1.98	1937	T	1.0	1942	1.0	1942	6	0	0	4	0	Mar.
Apr.	72.8	45.3	59.1	96	1931	28	1955+	220	2.29	2.36	1954	T	T	1955	T	1955	5	1	0	1	0	Apr.
May	80.6	50.9	65.8	105	1950	33	1954+	80	1.16	1.67	1939	0	0	-	0	-	3	6	0	0	0	May
June	89.0	56.4	72.7	109	1957+	40	1954	0	0.44	1.21	1937	0	0	-	0	-	1	15	0	0	0	June
July	96.5	60.7	78.6	113	1938	49	1955+	0	0.01	0.06	1946	0	0	-	0	-	0	26	0	0	0	July
Aug.	94.5	58.2	76.4	115	1933	46	1952	0	0.07	0.88	1947	0	0	-	0	-	*	25	0	0	0	Aug.
Sept.	89.8	54.8	72.3	112	1944	37	1948	10	0.35	2.20	1957	0	0	-	0	-	1	16	0	0	0	Sept.
Oct.	78.3	48.1	63.2	101	1952	20	1946+	100	1.45	2.44	1937	0	0	-	0	-	3	3	0	*	0	Oct.
Nov.	65.6	39.9	52.8	91	1936	24	1958+	370	2.28	2.21	1945+	0	0	-	0	-	4	*	0	4	0	Nov.
Dec.	55.0	36.7	45.9	75	1958	11	1932	590	5.07	3.40	1933	0.1	1.0	1941+	1.0	1941+	7	0	0	8	0	Dec.
Year	75.0	47.2	61.1	115	Aug. 1933	11	Dec. 1932	2810	25.75	3.40	Dec. 1933	0.6	11.0	Jan. 1937	9.0	Jan. 1937	44	92	0	36	0	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

Chico lies within the Sacramento River Valley just at the toe of the Sierra Nevadas. The lower slopes of the mountains are cut by sharply defined canyons draining from northeast to southwest. Big Chico Creek and Big Butte Creek are two of the streams draining into the valley in the immediate area of Chico, while the Feather River enters the valley a few miles to the south. Away from the alluvial fans the valley is quite level in the immediate vicinity of the city and to the westward. The weather station itself, however, is right at the foot of the fans.

In a larger sense Chico lies in the east side of the Sacramento Valley, the long axis of which extends from north northwest to south southeast. The valley is about 50 miles wide by 150 miles long. The City of Chico is located about two-thirds of the way from the lower end of the valley toward the upper and about 6 miles east of the Sacramento River. The Coast Range, on the west side of the valley, rises to peaks of 7,000 feet, while the Sierras reach as high as 9,000 feet at some points to the east of Chico. The principal opening into the valley from the ocean is the Carquinez Straits at the upper end of San Francisco Bay. This gap in the coastal range, though over 100 miles to the south, exerts some influence on the climate of Chico, permitting an inflow of marine air that moderates, to some extent, summer temperatures that would otherwise be more extreme.

As a result of its inland location Chico experiences a considerable range in temperature. The average daily minimum temperature remains above freezing even during the coldest months, although low readings on individual days will occasionally drop well below freezing. A reading of 11° has been reported from the climatological weather station, and it is likely that even lower readings have been experienced in some of the cold pockets of the surrounding area. In a typical year there are 36 days with minimum readings of 32° or below.

In spite of the moderating effect of the marine air that reaches the Chico area hot weather is characteristic of the summer period. The average daily maximum reading is near or above 90° from June through September and extremes of 100° or above have been observed at some time during each of the months from May through October. The warmest month of the year is usually July, although August will be the warmest month during some years. There are, typically, 92 days per year with maximum readings of 90° or above. In 1931 there were 77 consecutive days with the maximum reading 90° or higher. During the four months, June through September of that year, there were 45 days with maxima of 100° or warmer. Under the influence of clear skies and light winds, however, the nighttime temperatures drop into the 50s during most of the summer, providing relief from the higher readings of the daytime hours.

The seasonal heating day value of 2810 is comparable with that of Atlanta, Georgia. The bulk of the heating requirement falls between November and April, very little of it being recorded during the summer.

The annual precipitation at Chico averages 25.75 inches, with most of it falling during the colder half of the year. Only about 3% of the year's total falls during June, July, August and September. An annual rainfall of less than 19 inches can be expected one year in four and a total of more than 29 inches can be expected with the same frequency. The area around Chico occasionally experiences a thunderstorm, and there are infrequent reports of hail at the weather station. Thunderstorms with hail are probably more common over the adjacent foothills. Studies of rainfall intensity suggest that every other year, on the average, should produce precipitation as heavy as 0.52 inch in 1 hour, 1.40 inches in 6 hours, and 2.20 inches in 24 hours. Amounts on the order of 1.35 inches in 1 hour, 2.80 inches in 6 hours, and 4.40 inches in 24 hours, can be expected to occur once every 100 years.

The long dry period in summer results in depletion of soil moisture. If we assume that the soil within the root zone can store 4 inches of moisture (a reasonable estimate for the Chico area) it would appear that a good plant cover would use up all of the stored water—plus current precipitation—by around the first week of June. Thereafter, in the absence of irrigation, there would be very little plant growth until the fall rains started in October or November. With irrigation, however, the growing season of 234 days, from March 27 to November 16 (on the basis of 32°) permits the development of about three times as much plant material as can be grown without irrigation. Frost dates will vary from place to place in the immediate area of Chico.

The high summer temperatures result in high rates of evaporation. A pan 4 feet in diameter would evaporate 65 to 70 inches of water per year, with about 75% of this disappearing during the period May through October. This high rate of evaporation proves beneficial in the operation of many of the air conditioning units used in the Chico area.

The prevailing wind direction appears to be from the southeast, although northwest winds are almost as common, and other directions are not infrequent. Studies suggest that 85% of the time the wind will be not more than 15 mph, while in only 2% of the time will it exceed 25 mph. Maximum wind speeds in the Sacramento Valley area can be expected to reach 85 or 90 mph once in 50 years on the average.

A typical year will have 219 clear days, 57 partly cloudy, and 89 cloudy days. Sunshine probably averages about 50% of the possible during the winter month and reaches a maximum of 90% to 95% during the fall. Relative humidity during the afternoon will average from around 75% during the winter to the 20s during the summer months. Night values will range, on the average, from 85% during the winter to the 60s in the fall.

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Average Temperature (°F)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1930	43.6	53.7	56.4	61.6	63.5	74.6	78.4	76.4	69.2	62.9	56.6	46.0	61.9
1931	47.8	52.6	57.5	63.2	72.5	73.3	84.0	79.8	70.2	63.0	51.5	45.2	63.4
1932	45.4	48.0	57.4	58.0	66.5	76.3	78.2	77.6	76.8	63.6	56.9	40.3	61.9
1933	41.2	45.8	54.4	60.8	62.0	72.9	82.2	79.4	69.0	67.0	53.8	43.6	61.0
1934	46.2	51.1	60.0	63.4	69.0	73.0	78.8	78.8	74.2	63.6	54.1	48.2	63.4
1935	45.2	49.6	49.8	58.3	66.6	77.6	78.2	79.4	73.8	61.8	50.0	46.3	61.4
1936	47.6	49.0	55.0	60.0	67.2	72.4	79.5	78.3	73.2	65.6	54.6	44.4	62.2
1937	36.2	45.8	53.2	56.6	68.0	73.0	80.1	77.8	72.4	63.4	54.3	48.3	60.8
1938	45.3	47.7	50.0	57.0	67.3	75.8	79.9	75.9	73.8	60.8	50.1	46.2	60.8
1939	45.4	45.4	54.1	64.4	67.6	73.5	79.0	77.7	73.0	61.9	54.2	48.4	62.0
1940	46.4	50.8	54.4	58.7	68.4	78.2	76.9	77.2	69.4	63.2	50.2	48.6	61.9
1941	47.4	50.8	54.7	56.2	65.0	70.8	79.0	74.2	68.2	60.4	53.2	46.6	60.5
1942	43.8	46.6	52.1	56.2	61.1	72.4	79.0	76.6	70.6	64.4	52.4	45.1	60.0
1943	45.6	50.6	54.0	58.6	65.4	68.0	77.6	73.4	74.6	61.8	53.6	45.8	60.8
1944	44.6	47.6	53.8	55.4	65.1	70.1	77.2	76.8	75.3	65.0	50.1	48.5	60.8
1945	43.8	50.4	49.0	58.8	63.4	73.2	80.8	76.2	73.4	65.4	51.1	45.1	60.9
1946	43.6	45.6	51.5	60.2	65.2	70.5	78.1	76.3	72.4	60.2	50.5	45.4	60.0
1947	42.0	51.0	55.0	60.8	70.0	72.0	75.4	73.8	74.9	62.2	49.4	43.9	60.9
1948	48.8	46.8	48.6	52.9	60.2	71.2	75.7	73.8	70.3	62.7	51.6	42.5	58.8
1949	37.5	45.6	51.6	62.5	65.2	74.4	76.2	73.0	72.4	61.5	57.0	43.4	60.0
1950	41.9	49.9	52.0	60.4	66.2	71.1	79.1	77.4	71.2	62.8	56.5	48.6	61.4
1951	44.0	47.6	52.2	59.7	66.4	73.7	76.3	75.6	73.9	60.7	52.8	45.2	60.7
1952	43.7	48.8	49.0	59.0	67.0	67.3	80.6	76.7	74.8	67.0	50.2	45.9	60.9
1953	50.5	49.5	51.6	57.3	59.5	68.1	79.0	73.1	74.3	61.9	53.9	47.9	60.5
1954	45.6	48.5	49.8	60.8	67.0	70.4	78.3	71.9	68.6	61.4	51.4	42.1	59.6
1955	41.6	46.0	52.2	52.9	65.9	71.4	75.4	77.0	71.1	63.2	50.9	47.4	59.6
1956	46.5	44.4	52.5	58.0	64.7	73.2	78.2	74.7	71.4	60.7	53.4	45.3	60.2
1957	42.9	51.5	53.8	58.2	64.2	76.5	78.1	73.4	71.9	59.5	49.8	44.5	60.3
1958	45.3	53.5	49.7	58.0	68.4	72.5	79.1	81.9	74.7	66.8	54.4	52.2	63.0
1959	49.2	49.1	56.0	62.7	64.5	76.6	81.1	76.7	70.9	66.4	54.8	46.1	62.8
Mean	44.6	48.8	53.1	59.1	65.8	72.7	78.6	76.4	72.3	63.2	52.8	45.9	61.1

Total Precipitation (Inches)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1930	4.93	2.38	2.69	1.41	1.58	0.00	0.00	0.00	0.66	0.13	1.55	0.61	15.94
1931	4.50	2.92	0.83	0.85	0.89	0.97	0.00	T	0.42	0.41	1.93	8.09	21.81
1932	2.21	1.31	0.54	1.91	2.59	0.01	0.00	0.00	0.00	0.15	0.72	4.26	13.70
1933	4.21	1.00	2.41	0.14	1.19	0.00	0.03	0.00	0.16	1.42	0.00	9.47	20.03
1934	1.66	4.25	1.84	0.84	0.69	0.45	0.00	T	0.04	1.96	4.98	3.11	19.82
1935	7.09	4.40	4.88	4.89	0.62	0.00	T	T	0.31	1.22	1.40	4.20	29.01
1936	5.42	8.46	2.50	2.33	1.07	1.37	T	0.00	0.03	0.22	T	3.14	24.54
1937	4.16	7.39	7.23	1.30	0.06	1.44	0.00	0.00	0.00	3.00	7.35	5.50	37.43
1938	5.87	9.36	6.34	3.51	0.12	0.02	T	0.00	1.39	3.15	0.99	1.38	32.13
1939	1.75	0.93	2.84	0.17	2.44	0.09	0.00	T	0.91	0.77	0.05	3.39	13.34
1940	10.52	8.03	5.68	0.90	1.53	0.43	0.00	0.00	0.03	2.24	1.74	12.92	44.02
1941	9.87	8.69	4.25	4.14	1.59	0.32	0.00	T	0.13	1.79	3.76	11.00	45.54
1942	6.28	6.94	2.18	6.08	2.24	0.00	0.00	0.00	0.15	0.44	3.35	5.28	32.94
1943	8.06	2.61	3.86	3.25	0.42	0.31	T	0.00	0.00	0.34	2.24	3.75	24.84
1944	4.52	7.71	1.30	2.56	1.15	0.21	0.00	0.00	T	2.22	5.08	4.15	28.90
1945	2.20	5.17	5.43	0.02	1.55	0.57	0.00	T	0.00	3.12	4.44	9.65	32.15
1946	1.36	1.97	1.78	0.13	0.53	0.00	0.07	0.00	0.15	0.36	1.81	5.19	13.35
1947	0.54	3.58	3.20	1.20	0.83	0.88	0.00	1.23	T	5.38	1.98	2.05	20.87
1948	2.51	1.56	5.18	7.13	1.97	0.81	T	0.00	0.22	0.33	1.33	4.73	25.77
1949	0.91	1.84	8.38	T	0.77	0.00	0.00	T	0.05	T	0.93	1.51	14.39
1950	5.64	4.76	2.31	1.65	0.83	0.22	0.00	0.35	0.46	2.73	4.06	6.61	29.62
1951	4.98	4.23	0.53	1.31	1.78	0.00	0.00	T	0.00	2.78	4.27	7.29	27.17
1952	10.28	3.18	4.65	1.83	0.41	1.10	0.05	0.00	T	0.27	2.08	9.79	33.64
1953	4.70	0.40	2.59	3.40	2.01	1.07	0.00	0.40	0.00	1.62	3.03	0.73	19.95
1954	4.58	3.94	4.77	4.29	0.06	0.49	T	0.21	T	0.37	4.99	5.70	29.40
1955	3.01	0.77	0.60	3.79	0.12	0.18	0.00	0.00	0.20	1.02	3.08	11.71	24.48
1956	10.23	3.23	0.00	1.77	1.87	0.31	0.00	0.00	0.30	1.54	0.04	0.07	19.36
1957	4.74	3.86	2.60	1.57	1.80	0.02	0.00	0.00	2.82	3.99	0.80	3.16	25.36
1958	6.42	10.94	5.91	4.33	1.58	1.97	T	T	0.31	0.48	0.36	2.03	34.33
1959	6.22	5.61	0.91	1.94	0.63	0.00	0.00	T	1.86	0.00	T	1.54	18.71
Mean	4.98	4.38	3.27	2.29	1.16	0.44	0.01	0.07	0.35	1.45	2.28	5.07	25.75

STATION HISTORY

The Southern Pacific Railroad maintained weather records at Chico from 1870 to 1902. The observing point was at the railroad station, in town. From July 1902 through September 1903 Mr. Emil Maybem was the observer, but no information is available concerning the location of the instruments during that period. The Butte County Railroad agents took over the observational duties from October 1903 through 1915, with the equipment located at the Barber Station, about 0.8 of a mile south of the Chico Post Office.

In January of 1916 the station was moved to the U. S. Plant Introduction Gardens, about 3 miles ESE of the Chico Post Office. The record has been maintained at the Plant Introduction Gardens to the present time, although there have been two minor moves during that period. In December 1920 the station was moved about 0.5 of a mile further east, and in April 1951 there was a move of 175 yards to the WSW. A recording rain gauge was added to the instrumentation in January 1946, and evaporation measuring equipment was installed in April 1951. The present station is at an elevation of 205 feet. This weather summary covers the most recent 30-year period—the standard period for such summaries—and therefore uses the Plant Introduction Gardens record exclusively.

There are also a number of other records in the Chico area. Observations were made at the Army Flying School, 5.5 miles north of town, from 1942 through 1945. A rain gauge, thermometers, and thermograph were operated about 2 miles northeast of Chico by Mr. Edwin C. Miller from 1904 to 1912, and by Mr. J. H. Moore from 1912 to 1916. The fruit frost service of the Weather Bureau, under the direction of Mr. Harry Hansen, collects a large amount of temperature data from points in the Chico area during the colder months of the year.

The terrain and elevation of the station located at the Plant Introduction Gardens is such that records from there should be reasonably representative of conditions within the City of Chico, except for the local effects of urbanization. However, there can be rather significant differences in temperature and precipitation within short distances as a result of the effects of terrain, buildings and trees on these weather elements.

The Chico weather record, covering a period of approximately 90 years, is one of the finest records in the northern part of California. The agricultural and business community of the Chico area, as well as users in other parts of the State, owe a debt of gratitude to the observers who have recorded the weather so conscientiously through the years.