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Calif. Redwood City

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ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
ENVIRONMENTAL DATA SERVICE
IN COOPERATION WITH REDWOOD CITY CHAMBER OF COMMERCE
CLIMATOGRAPHY OF THE UNITED STATES NO. 20 — 04

CLIMATOLOGICAL SUMMARY

LATITUDE 37° 29' N
LONGITUDE 122° 14' W
ELEV. (GROUND) 31 Feet

STATION REDWOOD CITY, CAL.

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	32° and below	Min.: 32° and below	0° and below	Month
(a)	30	30	30	30		30		30	30	30		30	30		30		30	30	30	30	30	
Jan.	57.6	38.8	48.2	78	1948	16	1949	521	4.34	3.63	1943	T	T	1957+	T	1957+	8	0	0	10	0	Jan.
Feb.	60.8	41.2	51.0	79	1932	26	1949+	392	3.60	2.52	1945	T	T	1955+	T	1955+	7	0	0	4	0	Feb.
Mar.	65.1	42.8	53.9	84	1952	29	1953	344	2.55	3.28	1940	0	0		0		5	0	0	1	0	Mar.
Apr.	69.5	44.9	57.2	93	1931	31	1933	237	1.33	2.54	1958	0	0		0		3	*	0	*	0	Apr.
May	74.2	48.3	61.3	102	1950	36	1950+	140	.52	1.33	1957	0	0		0		2	2	0	0	0	May
June	79.0	51.6	65.3	108	1960	40	1939	45	.11	.44	1931	0	0		0		*	6	0	0	0	June
July	81.6	54.0	67.9	106	1931	43	1958	16	.01	.20	1946	0	0		0		*	5	0	0	0	July
Aug.	80.8	53.4	67.2	103	1946	43	1932	9	.02	.31	1935	0	0		0		*	4	0	0	0	Aug.
Sep.	80.4	52.4	66.5	105	1950	40	1948	30	.18	3.05	1959	0	0		0		*	6	0	0	0	Sep.
Oct.	73.9	48.5	61.2	97	1933	33	1949+	124	.80	1.46	1944	0	0		0		2	1	0	0	0	Oct.
Nov.	68.2	42.8	54.7	85	1932	23	1931	309	1.68	3.16	1946	0	0		0		3	0	0	1	0	Nov.
Dec.	59.1	40.5	49.8	76	1958	18	1932	471	4.12	4.00	1955	T	.2	1932	.2	1932	6	0	0	6	0	Dec.
Year	70.8	46.6	58.7	108	June 1960	16	Jan. 1949	2638	19.26	4.00	Dec. 1955	T	.2	Dec. 1932	.2	Dec. 1932	36	24	0	22	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.

THE CLIMATE OF REDWOOD CITY

Redwood City is situated on a peninsula close to the south end of San Francisco Bay. To the west, approximately 10 miles, is the Pacific Ocean, but the City is separated from the ocean by the northward extension of the Santa Cruz Mountains, rising at this point to around 2,000 feet elevation. A little to the north of west there is a saddle in the ridge, approximately 1,000 feet in elevation. Through this opening, and through others further north, marine air has limited access to the southern part of the Bay, though the Redwood City area is protected to a considerable degree from the direct inflow of marine air.

This portion of California has a marked seasonal distribution of precipitation, with the maximum during the winter and little or no rain during the summer period. Temperatures remain equable due to the proximity of the area to the ocean, and moderately cool summer temperatures are assured by the persistent marine inflow during the summer as a result of the semi-permanent high pressure area over the north-eastern Pacific Ocean and the thermal low pressure area over the interior of California.

Due to this circulation pattern the average daily temperature is only a little warmer in a summer month than in a winter month. The mean maximum in July is 82° and in January 58° . Minimum temperatures average 54° in July and 48° in January. Occasionally the onshore flow breaks down for a period of two or three days in summer or fall permitting afternoon temperatures to rise to 100° or higher, but the infrequency of these occasions is indicated by the fact that there are only 24 days per year, on the average, with maximum temperatures of 90° or higher. Similarly, the temperature has dropped to 16° on one occasion, but on the average there are only 22 days per year with minimums of 32° or lower.

Heating degree days, computed from a 65° base, total only 2,638 per year, a figure that is comparable with Cape Hatteras, North Carolina, and with the Central Valley of California.

The last reading of 32° or colder in the spring occurs, on the average, around February 14th, and the first occurrence in the fall is around December 5th, making a growing season of 294 days. In 2 years out of ten, however, there is no reading this cool during the fall season.

Precipitation averages 19.26 inches per year, but varies considerably from year to year. In 1/2 of the years it falls between 14.6 and 23.1 inches. 1 year in 20 is as dry as 10.2 inches, while with the same frequency it is as wet as 31.1 inches. About 92% of the annual precipitation falls during the 6 month period from November through March. Snow is seldom observed, and melts almost immediately when it does occur. Intensities of rainfall are suggested by the table on the reverse side.

Evaporation averages 56 inches per year from a Class A, 4-foot pan, and 43 inches per year from ponds or reservoirs. About 70% of the annual evaporation occurs during the period from May through October.

The marine influence is apparent in the relative humidity figures for the area. Based on data collected at San Francisco Airport and at Moffett Field it appears that early morning averages remain around 85% to 90% throughout the year. Afternoon readings average 60% to 65% in July and 65% to 70% in January. The 24-hour average is around 75% in summer and 80% in winter.

Winds, too, are estimated from airport data. Indications are that speeds are less than 3 mph one-third of the time and less than 9 mph two-thirds of the time. The strongest winds occur in winter, and readings of more than 23 mph occur less than 2% of the time. Wind speeds of 80 mph probably occur about once in 50 years. The wind direction is predominantly from the northwest quadrant (40%) and from the south or southeast (16%).

C. Robert Elford
ESSA State Climatologist
San Francisco, California

REDWOOD CITY, CALIFORNIA

Average Temperature (°F)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1931	49.2	53.2	54.9	58.2	63.5	62.6	69.6	67.4	63.8	57.0	50.8	46.5	58.1
1932	46.2	48.0	54.0	54.0	58.7	63.2	65.1	65.2	64.6	59.2	55.6	43.8	56.5
1933	44.4	46.8	52.3	54.2	55.2	60.4	66.3	65.6	63.2	63.4	55.4	49.0	56.4
1934	49.4	53.8	58.0	58.6	62.9	64.0	66.9	65.6	66.2	61.3	56.3	51.8	59.6
1935	48.2	51.4	50.0	56.6	59.4	66.2	66.4	67.1	64.6	59.7	57.0	49.4	57.5
1936	51.3	51.4	54.8	58.4	63.4	65.9	68.2	67.8	66.5	62.3	53.5	47.6	59.3
1937	41.8	49.2	54.0	54.4	60.4	65.4	67.9	68.0	65.0	62.2	55.6	50.0	57.8
1938	48.8	50.6	52.0	56.2	61.6	66.2	68.8	69.7	66.6	60.6	52.2	50.2	58.5
1939	47.7	48.6	52.5	58.5	61.8	65.4	67.9	67.8	69.6	61.2	53.9	51.6	58.9
1940	50.7	53.6	56.3	58.4	61.9	67.6	67.8	67.4	65.8	61.7	52.6	52.2	59.7
1941	51.2	53.8	56.8	55.2	62.2	64.6	70.2		66.8	61.0	56.8	53.1	
1942	50.0	51.9	54.2	57.0	60.6	65.5	69.6	68.0	65.8	62.1	54.8	50.8	59.2
1943	49.4	53.4	56.6	59.2	63.4	64.9		67.6	68.8	62.4	56.6	51.2	
1944	49.9	50.6	55.4	55.8	62.4	65.8	68.7	68.3	68.8	63.8	54.8	52.6	59.7
1945	48.8	53.6	52.8	59.2	59.4	67.1	69.3	66.7	66.9	62.3	54.7	51.1	59.3
1946	47.8	47.8	52.9	56.3	60.8	64.1	68.2	66.5	66.0	58.7	51.6	49.0	57.5
1947	43.6	51.6	55.6	59.6	63.0	67.4	65.5	67.6	66.8	61.7	50.8	48.0	58.4
1948	50.5	49.0	50.5	55.2	58.9	65.0	67.2	67.4	64.2	61.0	53.4	45.9	57.4
1949	40.8	47.4	53.3	59.3	61.5	66.2	65.7	66.2	66.3	59.5	57.3	47.5	57.6
1950	45.9	50.5	53.2	58.3	61.3	64.4	68.1	68.6	68.2	62.8	59.7	52.5	59.5
1951	49.2	50.9	53.9	55.3	62.2	64.1	66.7	66.7	66.2	61.2	55.8	48.0	58.4
1952	46.6	51.2	51.3	57.8	62.8	62.8	68.5	66.9	67.5	62.1	52.2	50.5	58.4
1953	52.8	51.4	52.7	55.7	59.0	62.8	67.7	66.6	67.6	60.2	56.2	51.3	58.7
1954	59.4	52.2	51.6	59.6	61.5	65.3	69.5	65.4	65.4	60.4	54.4	48.0	58.6
1955	45.3	49.0	53.9	52.8	60.8	63.9	64.7	65.1	65.0	60.5	53.5	52.2	57.2
1956	50.9	47.6	52.7	56.2	61.6	65.7	66.3	65.8	66.5	59.4	54.5	48.6	58.0
1957	45.6	53.6	55.2	59.1	61.3	68.4	69.1	66.9	67.2	61.4	54.2	49.6	59.3
1958	50.6	55.9	52.2	58.1	62.8	67.1	67.7	69.7	70.6	63.2	55.4	53.2	60.5
1959	52.2	51.4	57.6	61.3	62.2	67.6	70.3	70.0	66.9	64.8	55.1	50.2	60.8
1960	48.3	51.8	56.9	57.9	61.0	69.9	69.1	66.9	66.3	59.9	53.0	48.3	59.1
*1961	47.8	53.7	53.6	59.1	58.7	68.7	72.3	70.0	66.9	61.5	53.4	47.6	59.5
*1962	48.0	50.6	52.2	59.8	60.0	65.9	66.8	68.3	65.1	60.8	56.1	50.1	58.6
*1963	45.7	57.3	53.3	55.2	61.7	65.4	67.8	68.2	69.9	62.5	54.1	45.9	58.9
*1964	48.5	51.0	52.8	56.4	58.7	64.5	68.0	69.0	66.4	63.7	52.3	52.5	58.7
*1965	49.6	51.7	53.9	58.0	60.8	63.4	67.2	70.2	64.0	64.2	56.0	45.6	58.7
*1966	48.6	49.8	54.7	62.0	62.0	67.5	66.7	69.6	67.4	62.2	55.2	49.4	59.6
*1967	50.1	50.8	52.9	51.2	61.4	64.1							

*Not used in computing means and extremes

STATION HISTORY

In October 1930 the city government established a weather station at Fire Station No. 2, on the corner of Myrtle and Jefferson Streets, and since that date the weather instruments have remained in the same location. Fire Department personnel serve as the cooperative observers, in addition to their other duties. Recently the Redwood City Fire Department received the newly created Weather Bureau Institutional Award in recognition of 25 years of volunteer service to the community and to the nation.

Daily and monthly precipitation and monthly temperature records have been published by the Weather Bureau in Climatological Data--California since 1931, and daily temperature readings were added in 1948. The record is unbroken since the station was established except for two months in the early 1940s.

Because of the long and consistent record, the Weather Bureau was able to establish temperature and precipitation normals for the city, and this materially

REDWOOD CITY, CALIFORNIA

Total Precipitation (Inches)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1931	4.96	.87	1.16	.45	.79	.75	.01	0	T	.45	1.66	9.14	20.24
1932	2.76	3.23	.17	.45	.20	T	0	0	0	0	.27	2.77	9.85
1933	5.86	.60	2.96	.13	1.21	.05	0	0	.02	1.09	0	5.55	17.47
1934	1.07	3.83	T	.30	.28	.67	0	T	.16	.69	2.91	2.67	12.58
1935	5.21	1.01	4.15	3.71	0	0	0	.31	T	1.55	.41	2.03	18.38
1936	3.82	8.19	.98	1.48	.12	.15	.01	0	0	.42	.02	4.91	20.10
1937	4.64	5.67	6.54	.87	.02	.31	0	0	0	.82	2.97	4.01	25.85
1938	3.25	7.73	6.26	1.55	0	0	0	0	.06	1.11	1.30	1.29	22.55
1939	2.94	1.66	1.58	.66	1.05	0	0	0	.44	1.08	.33	.72	10.46
1940	12.28	8.99	4.88	.36	.32	0	0	0	.27	.68	.68	7.59	36.05
1941	6.72	6.99	3.29	4.04	.41	.05	.01	T	0	.98	1.13	7.10	30.72
1942	5.62	3.03	2.45	2.91	1.64	0	0	0	.15	1.14	3.06	2.43	22.43
1943	7.65	1.78	3.15	1.32	T	.02	0	0	T	.55	.65	1.86	16.98
1944	3.19	6.30	1.03	.99	.50	T	0	0	0	1.67	4.09	3.13	20.90
1945	.65	4.80	3.46	.30	.39	T	T	T	T	2.21	2.33	6.04	20.18
1946	1.05	1.64	2.19	.04	.27	0	.20	0	.04	.19	4.56	2.93	13.11
1947	.99	1.59	2.91	.19	.15	.43	0	T	T	2.84	.76	1.33	11.19
1948	.26	1.39	3.14	3.35	.41	0	.02	0	0	.25	.12	4.10	13.04
1949	1.20	3.39	4.91	T	.72	.01	.09	.21	.03	.07	1.54	2.09	14.26
1950	7.44	2.52	1.47	1.05	.53	.03	0	0	T	1.66	6.54	5.69	26.93
1951	2.92	2.21	1.18	.89	.64	.02	0	T	T	1.03	2.58	9.34	20.81
1952	8.57	1.90	4.43	.80	.25	.09	.03	0	.01	.14	2.51	10.19	28.92
1953	3.12	.04	1.76	2.11	.48	.16	0	.03	T	.24	2.44	.36	10.74
1954	4.33	2.67	3.07	.98	.04	.24	0	0	0	.02	2.30	4.00	17.65
1955	4.58	1.71	.11	1.55	.60	0	T	0	0	T	1.45	14.16	24.16
1956	7.85	2.36	.19	.94	.93	.01	.01	0	.22	1.10	0	.35	13.96
1957	2.97	4.06	1.42	1.32	2.76	T	T	0	.72	1.95	.66	4.12	19.98
1958	4.61	8.82	6.52	6.37	.30	.20	0	0	.10	.01	.12	1.06	28.11
1959	5.05	4.55	.14	.21	T	0	0	.02	3.07	0	T	1.65	14.69
1960	4.51	4.57	.89	.65	.63	0	T	0	T	.05	3.15	.99	15.44
*1961	1.95	.83	2.70	.94	.76	.03	0	.02	.36	.19	3.11	1.77	12.66
*1962	1.84	7.58	3.29	.25	T	0	0	.01	.01	6.39	.33	2.82	22.52
*1963	4.46	3.20	3.63	2.92	.55	T	0	T	.29	.95	3.98	.26	20.24
*1964	3.60	.27	1.67	.13	.56	.75	T	.08	0	1.30	3.59	6.63	18.58
*1965	3.88	1.08	1.96	3.25	0	T	0	.07	.01	T	4.45	5.17	19.87
*1966	2.18	1.81	.24	.66	.13	.09	.30	.04	.10	T	4.04	3.56	13.15
*1967	10.90	.17	5.44	4.68	.15	.52							

*Not used in computing means and extremes

STATION HISTORY - - Continued

increases the value of the climatological record. It is used regularly by engineers, designers, attorneys, manufacturers, sales personnel, and many others. The cooperation of the Redwood City Fire Department has made this summary possible.

John E. Stilz
Assistant State Climatologist

PRECIPITATION AMOUNTS (inches) THAT OCCUR IN GIVEN PERIODS (hours).

	Interval (hours)						
Frequency	1/2	1	2	3	6	12	24
1 Year in 10	0.9	1.2	1.5	1.8	2.7	3.7	4.9
1 Year in 100	1.3	1.5	2.2	2.7	3.8	4.9	6.0

(Data from WB Technical Paper No. 40.)