

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.

CALIFORNIA SECTION.

G. H. WILLSON, District Forecaster.

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GENERAL SUMMARY.

In California, April, 1916, was slightly above the normal in temperature, while the precipitation was decidedly below the normal. Taking the State as a whole, it was the driest April in seven years, the average precipitation having been 0.52 inch, whereas the normal is 1.79 inches. A total of 36 stations reported no rainfall whatever, while 11 other stations reported only a trace. The month was remarkably fine for April, there having been no severe or long-continued storms. The cloudiness was less and the sunshine greater than that recorded during April in many years. Coast stations received 70 per cent or more of the possible sunshine, while most interior stations received over 90 per cent of the possible amount. This is an unusual record for April. The latter half of the month was unusually windy, though that is a common feature of a spring month in California. As might be expected to follow the excessive snowfall in the mountains during the midwinter months, the run-off during April has been relatively great, as it was during the preceding month. However, as the streams were not augmented through rainfall there has been no approach to flood conditions at any point, except in the vicinity of Tulare Lake, where considerable agricultural land is still submerged.

The first four days of the month were unsettled, with scattered light showers, while the following five days were warm and dry. For three days, beginning on the 10th, showery weather again prevailed, with light to moderate rains at most places on the 11th. Cool weather followed the passage of these unsettled conditions, from the 12th to the 14th, when light frosts occurred in the interior lowlands. Though scattered showers again occurred in various portions of the State from the 16th to the 19th the latter half of the month was a period of fine weather and unbroken sunshine, with temperatures increasing from day to day, reaching the highest for the month on the 30th.

From an agricultural point of view the outstanding features of the month were the lack of rainfall and the excess of sunshine. These conditions were favorable for making hay. This crop, the first of the season, was heavier than usual, owing to the abundant midwinter rains. However, as April was the third successive month with excessive temperature and deficient precipitation agricultural conditions are somewhat below normal. The condition of deciduous fruits is below normal, partly because of local frosts and winds during March, but primarily because of the prolonged lack of moisture. Citrus fruit trees, however, are in excellent condition, the warm and dry weather having been favorable for the setting of the fruit. Grains and grasses are suffering from the drought, the grain heading prematurely, while pastures and ranges, generally, were showing the effect of the dry weather at the close of April. The season is everywhere advanced from one to two months. Even forest fires, which do not usually occur until June or July, were first reported this year during April. While the agricultural outlook in various branches is at present unfavorable the situation is not yet serious. Ample water for irrigation and power purposes is stored in the mountains, and considerable snow still remains in the high Sierra.

A. H. P.

PRESSURE.

The monthly mean atmospheric pressure for the State, reduced to sealevel, was 30.03 inches. The highest was 30.41 inches at Eureka on the 12th. The lowest was 29.60 inches at Independence on the 11th. The range for the State was 0.81 inch.

TEMPERATURE.

The monthly mean temperature for the State was 57.1 degrees, which is 0.1 degree above the normal. The highest monthly mean was 81.0 degrees, at Greenland Ranch; and the lowest was 36.1 degrees, at Tamarack. The highest temperature, 104 degrees, occurred at Greenland Ranch on the 27th; and the lowest, 11 degrees, occurred at Madeline on the 19th. The range for the State was 93 degrees.

PRECIPITATION.

The average precipitation for the State was 0.52 inch, or 1.27 inches below the normal. The greatest monthly amount was 6.43 inches, at Crescent City. 36 stations reported no precipitation. The greatest amount in 24 hours was 2.00 inches at Stirling City, on the 17th.

RELATIVE HUMIDITY.—(Per Cent.)

Stations.	5 a. m.	5 p. m.	Mean.
Eureka.....	91	82	87
Fresno.....	79	81	80
Los Angeles.....	89	86	87
Mount Tamalpais.....	84	80	82
Red Bluff.....	63	26	45
Sacramento.....	85	87	86
San Diego.....	84	71	78
San Francisco.....	83	61	72
San Jose.....	87	50	68
San Luis Obispo.....	82	62	72

SUNSHINE AND CLOUDINESS.

Stations.	Actual hours of sunshine.	Per cent of the possible.
Eureka.....	280	70
Fresno.....	373	94
Los Angeles.....	316	81
Mount Tamalpais.....	377	95
Red Bluff.....	325	82
Sacramento.....	366	92
San Diego.....	298	76
San Francisco.....	333	84
San Jose.....	358	91
San Luis Obispo.....	327	83

WIND MOVEMENT.—(Miles.)

Stations.	Total movement for month.	Average hourly velocity.	Maximum velocity.	Direction.	Date.
Eureka.....	6,058	8.4	36	n.	1
Fresno.....	6,521	9.1	28	nw.	10
Independence.....	5,506	7.6	30	nw.	17
Los Angeles.....	3,937	5.5	16	s.	18
Mount Tamalpais.....	16,483	22.9	84	nw.	10
Point Reyes.....	18,426	25.6	87	nw.	11
Red Bluff.....	4,720	6.6	30	nw.	29
Sacramento.....	6,324	8.8	37	nw.	29
San Diego.....	4,341	6.0	22	w.	11
San Francisco.....	6,914	9.6	31	nw.	13
San Jose.....	3,950	5.5	24	w.	11
San Luis Obispo.....	3,470	4.8	18	w.	17

The prevailing direction of the wind for the State was northwest.

Climatological Data for April, 1916.

Table with columns: Stations, Counties, Elevation, Length of record, Temperature (Mean, Departure from normal, Highest, Date, Lowest, Date, Greatest daily range), Precipitation (Total, Departure from normal, Greatest in 24 hours, Snowfall), Number of days (Precipitation of inch or more, Clear, Partly cloudy, Cloudy), Prevailing direction of wind, Observers.

Climatological Data for April, 1916.—Continued.

Table with columns: Stations, Counties, Elevation, Length of record, Temperature (Mean, Departure from normal, Highest, Date, Lowest, Date, Greatest daily range), Precipitation (Total, Departure from normal, Greatest in 24 hours, Snowfall), Number of days (Precipitation or more, Clear, Partly cloudy, Cloudy), Prevailing direction of wind, Observers.

Climatological Data for April, 1916.—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahr.						Precipitation, in inches.				Number of days.			Observers.			
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Snowfall (un-melted).	Precipitation .01 inch or more.	Clear.		Partly cloudy.	Cloudy.	Prevailing direction of wind.
Ukiah	Mendocino	620	23	57.0	+2.3	85	30	31	+12	53	0.25	-2.20	0.15	0	2	21	8	1	nw.	Dr. George McCowen.
Vacaville	Solano	175	23	59.6	+0.8	84	30	37	18	41	0.08	-1.89	0.08	0	1	28	2	0	w.	J. E. Bassford.
Valyerino	Los Angeles	3,750	..	57.2	..	83	27	31	3	47	0.00	..	..	0	0	19	9	2	..	U. S. Forest Service.
Visalia	Tulare	334	28	63.8	+5.0	84	9	44	+17	34	0.04	-0.72	0.04	0	1	27	2	1	nw.	Santa Fe Co.
Walnut Creek	Contra Costa	149	2	59.8	+1.7	84	30	38	12	40	0.04	-1.36	0.04	0	1	..	..	..	..	R. L. Nougaret.
Warner Springs	San Diego	3,165	8	37.4	..	86	27	35	+12	48	0.03	..	0.03	0	1	23	2	5	..	J. A. Ream.
Wasco	Kern	336	16	61.6	+2.0	84	30	40	13	38	0.45	-0.06	0.38	0	2	26	0	4	sw.	Santa Fe Co.
Watsonville	Santa Cruz	23	20	57.2	-0.3	84	30	32	18	44	0.08	-0.99	0.08	0	1	19	9	2	s.	Spreckels Sugar Co.
Weaverville	Trinity	2,162	4	56.7	..	86	30	24	12	56	0.65	-2.63	0.55	0	2	22	5	3	..	U. S. Forest Service.
Weitchpec	Humboldt	1,700	6	51.5	..	81	30	30	12	42	2.30	..	0.54	0	9	19	4	7	w.	G. S. Garnett.
West Branch	Butte	3,216	2	51.3	..	76	113	30	+12	42	1.59	..	0.84	0	2	19	4	7	n.	Pacific Gas & Electric Co.
Wheatland	Yuba	84	29	61.8	+3.4	84	30	41	+19	39	0.06	-1.34	0.06	0	1	16	12	2	s.	Wm. Lumbard.
Willows	Glenn	136	37	61.8	+1.5	84	19	36	18	43	0.00	-1.20	0.00	0	0	29	1	0	n.	F. E. Barnhouse.
Yorba Linda	Orange	405	2	61.0	..	87	18	39	12	42	0.09	..	0.06	0	2	23	7	0	w.	S. J. Walker.
Yosemite	Mariposa	3,945	12	67.0	..	96	10	29	14	60	0.58	-1.53	0.45	0	3	23	4	3	s.	J. R. Kelly.
Yreka	Siskiyou	2,625	27	50.4	..	76	18	25	12	45	0.33	..	0.28	0	3	15	6	9	nw.	U. S. Forest Service.
Means and Extremes.				57.1	+0.1	104	27	11	19	60	0.52	-1.27	2.00	0.1	2	23	4	3	nw.	

The departures from the normal temperature and precipitation are computed only for such stations as have ten or more years of record, but all complete reports are used in determining section or division means.

** Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.

† Also on other dates.

T. Precipitation is less than 0.01 inch rain or melted snow.

a, b, c, etc., indicate respectively, 1, 2, 3, etc., days missing from the record.

COMPARATIVE DATA FOR APRIL.
MEAN MONTHLY TEMPERATURE FOR THE STATE.

1897	60.6	1907	58.2
1898	60.9	1908	58.4
1899	58.1	1909	57.6
1900	58.9	1910	59.8
1901	55.8	1911	54.2
1902	56.2	1912	51.9
1903	54.8	1913	54.9
1904	57.2	1914	56.6
1905	57.2	1915	56.0
1906	56.3	1916	57.1

AVERAGE PRECIPITATION FOR THE STATE.

1897	0.51	1907	1.11
1898	0.41	1908	0.67
1899	0.60	1909	0.12
1900	2.14	1910	0.62
1901	2.16	1911	1.93
1902	1.88	1912	3.07
1903	1.28	1913	1.44
1904	2.18	1914	2.14
1905	1.18	1915	1.85
1906	1.68	1916	0.52

ERRATA. JANUARY, 1916.

Antelope Valley, page 7, total precipitation, 7.15, should be 7.13.
 Burney, pages 4 and 7, total precipitation, 11.48, should be 11.25; pages 4 and 11, total snowfall, 85.0, should be 83.0.
 Blue Canon, pages 4 and 7, total precipitation, 29.42, should be 31.49; pages 4 and 11, total snowfall, 227.8, should be 230.5.
 Campbell, pages 4 and 7, total precipitation, 10.05, should be 10.11.
 Chester, page 7, total precipitation, 15.96, should be 15.81.
 Chico, page 4, highest temperature, 54°, on 22nd, should be 58°, on 25th; total precipitation, 12.08, should be 12.48.
 Crescent City, page 4, lowest temperature, 29°, on 19th, should be 28°, on 29th.
 Delta, page 4, highest temperature, 50°, on 4th, should be 52°, on 23rd.
 Denair, pages 4 and 7, total precipitation, 3.85, should be 3.86.
 Glennville, page 4, mean temperature, 36.8°, should be 36.6°.
 Gold Run, pages 4 and 7, total precipitation, 17.35, should be 17.53.
 Gridley, page 8, total precipitation, 9.63, should be 9.98.
 Madeline, page 5, total snowfall, 80.0, should be 87.0.
 Magalia, page 5, number of days with precipitation, 11, should be 20.
 North Fork, page 5, number of days with precipitation, 18, should be 21.
 Oak Grove, page 5, number of days with precipitation, 15, should be 14.
 Oroville (near), page 5, mean temperature, 44.2°, should be 43.6°.
 Redlands, page 6, number of days with precipitation, 14, should be 16.
 Rocklin, page 5, mean temperature, 49.9°, should be 44.9°; number days with precipitation, 11, should be 12.
 Rohnerville, page 5, mean temperature, 44.6°, should be 42.6°.
 San Bernardino, page 5, highest temperature, 65°, on 7th, should be 67°, on 22nd.
 Seven Oaks, pages 5 and 9, total precipitation, 31.10, should be 31.55.
 Stanwood, page 5, mean temperature, 26.7°, should be 36.6°.
 Susanville, pages 5 and 9, total precipitation, 11.48, should be 10.76.
 Wasioja, page 9, total precipitation, 11.67, should be 12.67.

DELAYED REPORTS.

Stations.	Month.	Temperature.					Total precipitation
		Mean	Max.	Date	Min.	Date	
Spreckels	January.	45.0	77	7	25	11	7.64
Gray Mountain	February.	49.7	73	18	20	1	0.50
San Miguel Island	"	56.0	79	15	39	1	1.81
Spreckels	"	56.2	86	15	30	1	2.02
Fort Ross	March.	..	..	..	..	..	4.48
Gray Mountain	"	55.0	88	12	27	16	0.40
Hearst (near)	"	50.8	84	10	31	10	4.49
Lick Observatory	"	47.6	78	10	24	24	2.96
San Miguel Island	"	55.9	86	11	45	16	1.46
Spreckels	"	*54.2	*93	10	*31	24	1.35

West Branch, page 6, total snowfall, 135.3, should be 136.3.
 Yorba Linda, page 6, highest temperature, 63°, on 7th, should be 67°, on 20th.

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Auburn, page 18, number of days with precipitation, 15, should be 16.
 Cedarville, page 18, mean temperature, *54.6°, should be *56.6°.
 Delta, pages 18 and 21, total precipitation, 6.95, should be 7.65.
 Dinuba, page 21, total precipitation, 2.56, should be 2.52.
 Deer Creek, page 18, highest temperature, 96°, on 11th, should be blank.
 Emigrant Gap, page 18, lowest temperature, 22°, on 1st, should be 20°, on 29th.
 Gold Run, page 18, mean temperature, 59.6°, should be 49.3°.
 Grass Valley, page 18, mean temperature, 48.5°, should be 48.6°.
 Hetch Hetchy, page 18, mean temperature, 42.9°, should be 42.8°.
 Lick Observatory, page 19, number of partly cloudy days, 6, should be 7.
 Milton (near), page 19, greatest 24-hour precipitation, 0.76, should be 0.81.
 Oceanside, page 19, greatest 24-hour precipitation, 0.34, should be 0.47.
 Ojai Valley, page 19, number of clear days, 17, should be 18.
 Portola, page 19, mean temperature, 32.8°, should be 32.5°; greatest 24-hour precipitation, 0.04, should be 0.20.
 Redlands, page 19, mean temperature, 57.6°, should be 57.3°.
 Stanwood, pages 19 and 23, total precipitation, 7.87, should be 8.17.
 Wasco, page 20, mean temperature, 54.0°, should be 52.0°.

DATES OF MISCELLANEOUS PHENOMENA.

Thunderstorms.—Auberry, 2; Bucks, 1; Camptonville, 1, 11; Chester, 1, 10; Cloverdale, 1; Converse Nursery, 3, 4; Davis, 11; Deer Creek, 1, 3; Downville, 1; Dudleys, 2, 4, 11; Durham, 13; Holcomb, 3; Hullville (near), 1; Lick Observatory, 2; McKinney's, 1; Merced, 11; Mill Creek (No. 1), 2, 3; North Lakeport, Peachland, 1; Seven Oaks, 3; Sulphur Banks, 1; Three Rivers, 4; Twin Valley, Ukiah, 1; Weitchpec, 3, 10; West Branch, 1; Yosemite, 10, 11.
Earthquakes.—Lone Pine, 12.

Daily Precipitation for April, 1916.—Continued.

Table with columns for Stations, Day of Month (1-31), and Total. Rows list various locations such as Goffs, Gold Run, Grass Valley, etc., with corresponding precipitation amounts for each day.

Daily Temperature for April, 1916.

Table with columns for Stations, 1-31, and Mean. Rows list various California locations such as Alturas, Bakersfield, Barstow, etc., with corresponding temperature data for each day of the month and a monthly mean.