

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.

CALIFORNIA SECTION.

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GENERAL SUMMARY.

Unseasonably cold and dry weather prevailed in California during November, which was the sixth consecutive month with a mean temperature below normal. At several stations the lowest temperatures ever recorded during November occurred during this month. The temperature fell below zero during the last week of the month in the northeastern plateau region. Cold, desiccating northerly winds prevailed. Rainfall was deficient, and the average precipitation for the State as a whole was but 32 per cent of the normal. Scattered, light showers fell from the 6th to the 8th, and the first well-defined storm of the season began about the 26th, and continued into December. This was a severe storm, and gave copious rains in the interior valleys and heavy snow in the mountains. High winds accompanied this storm, and attained destructive violence from the 26th to the 28th. The damage from wind was estimated at \$1,500,000, most of which was sustained by shipping in the San Francisco Bay region. The heavy precipitation which accompanied this storm did much good, however, by terminating the long-continued drought, relieving the hydroelectric power situation, extinguishing forest fires, and giving deep snow in the Sierra Nevada Mountains, where there had previously been little or no snowfall during the present season. At the close of November the accumulated seasonal rainfall was about normal in southern California, but elsewhere it was far below normal. Streams which had maintained extremely low stages for many months, began to rise rapidly during the last week of the month.

Plowing was retarded, and the germination and growth of winter grains were delayed by the cold and dry weather, though the rains near the close of the month improved conditions somewhat. Feed on the ranges was short, and grazing cattle were not in the best condition. The harvesting of excellent crops of rice and apples was completed under favorable weather conditions. Frost and rain ended the season for beans, tomatoes and grapes. Though frosts were frequent, slight damage was done to cotton, olives and citrus fruits. Navel oranges approached maturity; picking was begun in a few places and shipment eastward was started. The agricultural year now drawing to a close has been satisfactory, and favorable weather prevailed throughout the harvest season of a great variety of crops.

A. H. P.

PRESSURE.

The mean sea level pressure, determined from the records of twelve regular Weather Bureau stations, was 30.05 inches. The highest was 30.54 inches at Independence on the 21st; the lowest was 29.47 inches at Los Angeles on the 27th; the range for the State was 1.07 inches.

TEMPERATURE.

The monthly mean temperature for the State, as shown by the records of 101 stations, was 50.9°, which is 2.0° below the normal. The highest monthly mean was 61.5°, at Los Angeles; and the lowest was 24.2°, at Fordyce Dam. The highest temperature, 93°, occurred at Azusa on the 16th; and the lowest, -10°, occurred at Fordyce Dam on the 27th. The range for the State was 103°.

PRECIPITATION.

The average precipitation for the State, as shown by the records of 246 stations, was 0.90 inch, or 1.91 inches below the normal. The greatest monthly amount was 8.33 inches, at Sonora. No rain fell at 11 stations. The greatest amount in 24 hours was 4.90 inches at Sonora on the 30th.

RELATIVE HUMIDITY, SUNSHINE AND CLOUDINESS.

Stations.	Relative humidity. (Per cent.)			Sunshine.	
	5 a. m.	5 p. m.	Mean.	Actual No. of hours	Per cent of possible.
Eureka.....	90	80	85	130	44
Fresno.....	59	32	45	268	88
Independence.....	43	26	34	280	92
Los Angeles.....	53	64	58	268	83
Mount Tamalpais.....	48	49	49	267	88
Red Bluff.....	66	33	50	215	73
Sacramento.....	64	36	50	236	78
San Diego.....	70	66	68	229	73
San Francisco.....	70	54	62	248	82
San Jose.....	53	53	53	244	80
San Luis Obispo.....	61	47	54	278	90

WIND MOVEMENT.—(Miles.)

Stations.	Total mov. for month.	Ave. hr. velocity.	Maximum velocity.	Direction.	Date.	Prev. dir.
Eureka.....	4,246	5.9	42	n.	26	n.
Fresno.....	3,599	5.0	29	nw.	26	nw.
Independence.....	5,153	7.2	38	n.	26	n.
Los Angeles.....	4,032	5.6	23	nw.	7	n.
Mount Tamalpais.....	15,538	21.6	88	n.	27	nw.
Point Reyes.....	15,966	22.2	73	nw.	7	nw.
Red Bluff.....	4,429	6.2	36	nw.	27	nw.
Sacramento.....	5,419	7.5	48	nw.	26	nw.
San Diego.....	4,292	6.0	34	w.	7	nw.
San Francisco.....	6,928	9.6	62	ne.	27	n.
San Jose.....	4,237	5.9	36	nw.	27	nw.
San Luis Obispo.....	2,691	3.7	22	w.	7	n.

COMPARATIVE DATA FOR NOVEMBER.

Year.	Mean temp.	Ave. precip.	Year.	Mean temp.	Ave. precip.	Year.	Mean temp.	Ave. precip.	Year.	Mean temp.	Ave. precip.
1897.....	50.8	1.41	1903.....	55.2	5.03	1909.....	50.7	4.52	1915.....	50.8	1.96
1898.....	51.6	0.99	1904.....	53.4	1.44	1910.....	52.5	1.91	1916.....	48.0	1.77
1899.....	52.1	3.82	1905.....	52.8	2.26	1911.....	51.1	1.00	1917.....	54.1	1.83
1900.....	54.7	5.21	1906.....	52.6	1.92	1912.....	52.2	2.85	1918.....	50.5	3.10
1901.....	54.9	2.65	1907.....	52.7	0.28	1913.....	52.2	5.00	1919.....	50.9	0.90
1902.....	50.8	3.61	1908.....	52.9	1.85	1914.....	54.2	0.80	.....	.....	.....

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. † Also on other dates. a, b, c, etc., indicate respectively, 1, 2, 3, etc., days missing from the record.

Daily evaporation (inches) and wind movement (miles) for November, 1919.

Stations.	Data.	Day of Month.																															Monthly.	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
Chula Vista**1..	{ Evaporation.....	143	141	142	133	156	172	207	167	160	124	122	125	125	124	131	222	128	121	1050	103	257	223	118	082	075	178	030	069	095	076	...	3,999	
	{ Wind movement.....	74	73	73	75	86	95	221	100	97	68	67	56	50	48	72	57	45	87	87	68	91	116	75	76	112	357	45	63	63	60	...	2,657	
Dodgeland*2....	{ Evaporation.....	122	088	069	085	060	059	170	101	160	060	060	108	059	061	050	056	064	049	091	152	081	063	049	145	064	*	*	416	045	...	2,667		
	{ Wind movement.....	20	20	19	20	60	30	30	100	40	70	20	30	10	30	30	10	10	40	10	120	115	15	30	10	48	43	207	131	20	14	...	1,359	
Oakdale (near)*3	{ Evaporation.....	158	179	064	232	119	110	124	165	200	167	112	120	080	124	115	131	121	114	116	243	321	134	116	106	127	065	264	*	*	397	039	...	4,443
	{ Wind movement.....	84	75	93	53	97	120	98	232	200	102	76	62	30	40	43	51	58	57	121	230	242	48	72	60	63	85	336	224	145	103	...	3,300	
Tahoe**4.....	{ Evaporation.....	100	060	030	050	050	110	*	010	200	290	130	070	070	080	090	120	140	050	070	080	130	110	100	070	150	100	*	*	320	110	...	3,211	
	{ Wind movement.....	175	65	87	143	35	39	29	35	51	41	74	60	27	47	55	22	35	70	83	35	73	111	74	42	99	65	492	116	79	50	...	2,409	

\* Observation taken at 7 a. m.; \*\* at 8 a. m. † Included in next following entry. 1 Ele. 9 ft.; 10 miles SE of San Diego. 2 Ele. 125 ft.; 16 miles SW of Chico. 3 Ele. 215 ft.; Woodward Reservoir, 8 miles N of Oakdale. 4 Ele. 6230 feet; float in Lake Tahoe.

Climatological Data for November, 1919.

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, Clear, Partly cloudy, Cloudy), Prevailing direction of wind, Observers.



Daily Temperature for November, 1919.

Table with 32 columns (Stations 1-31, Mean) and 31 rows (Bakersfield to Stockton). Each row contains two columns of data (Maximum and Minimum) for each station, followed by a Mean column.

SUPPLEMENTAL PRECIPITATION TABLE.

Table with 12 columns (Stations, Watersheds, Precip. inches) and 31 rows (Abbotts to Dinuba). Each row lists a station, its watershed, and the precipitation amount in inches.