

U. S. DEPARTMENT OF AGRICULTURE  
WEATHER BUREAU

CHARLES F. MARVIN, CHIEF

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CLIMATOLOGICAL DATA

CALIFORNIA SECTION

NOVEMBER, 1915

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BY

GEORGE H. WILLSON

DISTRICT FORECASTER AND SECTION DIRECTOR

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SAN FRANCISCO, CAL.  
WEATHER BUREAU OFFICE  
DECEMBER 21, 1915

# Departure of the Mean Temperature from the Normal, November, 1915.



U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.

CALIFORNIA SECTION.

G. H. WILLSON, District Forecaster.

VOL. XIX. SAN FRANCISCO, NOVEMBER, 1915. No. 11.

GENERAL SUMMARY.

The dry weather which had distinguished the preceding fall months ended in southern California with the rain storm of the 5th and 6th, and in the northern part of the State with the disturbance of the 8th and 9th. The latter was the only storm in which the rain area covered the whole State, but there were a number of times when the weather was unsettled and rain occurred from the Bay section north. The end of the month showed a state-wide deficiency, notwithstanding that in the northern coast counties the precipitation was quite considerable, sometimes approaching the normal and in a few cases exceeding it.

The passage of the disturbance of the 9th was followed by a period of high pressure, which caused frost in nearly all sections, varying in severity, but persisting until the 15th. On the 13th "northers" were experienced in southern California. A change to rain came on the 15th when the wet weather extended southward as far as San Francisco and Sacramento, a condition which was repeated later in the month with the successive disturbances of the 23rd and 25th. The 27th and 28th comprised another period of general frost, during which freezing night temperatures occurred in most sections north of the Tehachepi.

Citrus crops were not affected by either the earlier or later frosts, and the grape harvest was so nearly completed that the rain early in the month caused very little loss by bringing the picking to an end. Rice growers declared that the rain had done them very little damage as more than three-fourths of the crop had been harvested. Cattle men and grain farmers were pleased to see the drought terminate, but it is doubtful if the precipitation either for the initial storm or for the month as a whole was enough to be of very much benefit to the grain and grazing interests, except over a comparatively small area. T. R.

PRESSURE.

The monthly mean atmospheric pressure for the State, reduced to sea-level, was 30.11 inches.

The highest was 30.50 inches at Red Bluff on the 13th.

The lowest was 29.70 inches at Independence on the 23rd.

The range for the State was 0.80 inch.

TEMPERATURE.

The monthly mean temperature for the State was 50.8 degrees, which is 2.1 degrees below the normal.

The highest monthly mean was 63.8 degrees at Biggs and the lowest was 31.8 degrees at Fordyce Dam.

The highest temperature, 96 degrees, occurred at Blythe on the 3rd, and the lowest, -18 degrees, at Bridgeport on the 10th. The range for the State was 114 degrees.

PRECIPITATION.

The average precipitation for the State was 1.96 inches or 0.85 inch below the normal.

The greatest monthly amount was 16.47 inches at Crescent City while none occurred at 13 stations.

The greatest amount in 24 hours was 4.95 inches at Branscomb on the 25th.

MISCELLANEOUS PHENOMENA.

*Thunderstorms.*—Chico (near), 14; Crescent City, 9, 10, 24; Dunlap, 9; Eureka, 15, 23; La Porte, Red Bluff, 23; Three Rivers, 10; Weitchpec, 1, 23.

*Earthquakes.*—Blythe, Brawley, El Cajon, 20; Julian, 25; Oak Grove, Tustin, 20.

RELATIVE HUMIDITY.—(Per Cent.)

Stations.	5 A. M.	5 P. M.	Mean.
Eureka.....	91	84	88
Fresno.....	76	44	60
Los Angeles.....	66	57	62
Mount Tamalpais.....	71	72	71
Red Bluff.....	80	52	66
Sacramento.....	82	55	68
San Diego.....	73	64	68
San Francisco.....	83	62	72
San Jose.....	91	63	77
San Luis Obispo.....	70	53	62

SUNSHINE AND CLOUDINESS.

Stations.	Actual Hours of Sunshine.	Percent of the Possible.
Eureka.....	89	30
Fresno.....	244	80
Los Angeles.....	261	84
Mount Tamalpais.....	171	56
Red Bluff.....	135	45
Sacramento.....	163	54
San Diego.....	268	85
San Francisco.....	209	69
San Jose.....	227	76
San Luis Obispo.....	195	63

WIND MOVEMENT.—(Miles.)

Stations.	Total Movement for Mo.	Avr. Hr. Vel.	Max. Vel.	Dir.	Date.
Eureka.....	4200	5.8	34	sw	25
Fresno.....	3598	5.0	23	nw	24
Independence.....	3615	5.0	26	sw	24
Los Angeles.....	4000	5.6	24	nw	16
Mount Tamalpais.....	11397	15.8	62	n	26
Point Reyes.....	11226	15.6	64	nw	26
Red Bluff.....	3148	4.4	29	s	25
Sacramento.....	4274	5.9	27	se	8
San Diego.....	3373	4.7	26	nw	10
San Francisco.....	4266	5.9	27	sw	8
San Jose.....	3515	4.9	24	se	8
San Luis Obispo.....	3055	4.2	20	n	20

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

Climatological Data for November, 1915.

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

Climatological Data for November, 1915.—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahr.						Precipitation, in inches.					Number of days.				Prevailing direction of wind.	Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Snowfall (unmelted).	Precipitation 0.1 inch or more.	Clear.	Partly cloudy.	Cloudy.			
Jamestown	Tuolumne	1,471	12																		Sierra Railway Co.
Kennedy Mine	Amador	1,500	1	53.4		73	1	33	10	26	1.03	-3.06	0.67	0	3						Webb Smith.
Kennett	Shasta	730	3	50.0		77	1	31	10 <sup>7</sup>	33	5.88		2.41	0	6	6	12	12	sw.		C. H. Kremers.
Kentfield	Marin	65	27	56.7		71 <sup>b</sup>	1	27 <sup>a</sup>	11 <sup>a</sup>	30 <sup>b</sup>	1.14	-3.46	0.46	0	5	17	9	8	w.		R. Cunningham.
King City	Monterey	333	28	56.7	+2.8	87	3	22	14	43	0.00	-1.27	0.00	0	0	14	0	16	sw.		Southern Pacific Co.
La Jolla	San Diego	2,715	1	52.0 <sup>a</sup>		73 <sup>a</sup>	1	37 <sup>a</sup>	11 <sup>a</sup>	43 <sup>a</sup>	1.57		0.57	0	4	15	3	10	n.		Ben Amago.
Lake Eleanor	Tuolumne	4,700	5	42.3 <sup>b</sup>		72 <sup>b</sup>	1	33	11	43 <sup>b</sup>	1.95		1.25	5.5	4	12 <sup>b</sup>	6 <sup>b</sup>	10	s.		Lasley Lee.
Lake Spaulding	Nevada	4,600	1	40.6		74	1	12	10	40	4.13	-4.19	1.00	20.0	6						M. Magsen.
La Porte	Plumas	5,000	21	35.6	-5.5	59	5 <sup>1</sup>	15	10	33	5.33	-3.73	1.33	23.0	9	10	7	13	n.		C. W. Hendel.
Las Plumas	Butte	506	1	54.5		78	1	35	13	25	2.81		1.73	0	7	13	6	11	sw.		Great Western Power Co.
Le Grande	Merced	255	15	52.5	+0.8	78	1	28	13 <sup>a</sup>	34	0.15	-1.29	0.15	0	1	27	0	3	w.		Santa Fe Co.
Lemon Cove	Tulare	600	20	54.0	-2.6	83	3	33	30	35	0.70	-0.86	0.50	0	3	14	0	6	sw.		H. B. Howard.
Lick Observatory	Santa Clara	4,209	26	46.4 <sup>a</sup>	-2.0	68 <sup>a</sup>	1	29 <sup>b</sup>	10	21 <sup>a</sup>	1.13	-1.81	0.77	0.2	7	17	7	6	n.		The Director.
Lindsay	Tulare	384	1	51.2		80	2	27	14 <sup>a</sup>	38	0.46		0.23	0	3	13	12	5	nw.		Basil Prior.
Livermore	Alameda	485	44																		E. G. Still.
Lone Pine	Inyo	3,728	10	51.2	+4.2	84	1	22	13 <sup>a</sup>	41	0.14	-0.01	0.07	T.	2	26	4	0	sw.		G. F. Marsh.
Los Angeles	Los Angeles	293	38	61.8	+3.4	88	19	44	23	29	1.35	-0.03	1.12	0	3	17	8	5	sw.		U. S. Weather Bureau.
Los Banos **	Merced	121	28	59.4	+4.2	84	5 <sup>1</sup>	33	14 <sup>a</sup>		0.10	-0.93	0.10	0	1	12	4	14	n.		Southern Pacific Co.
Los Gatos	Santa Clara	690	28	53.6	-0.4	79	1	37	11 <sup>a</sup>	29	1.06		0.64	0	4	17	5	8	w.		F. H. McCullagh.
Lyon Valley	San Diego	2,250	1	42.9		78	1	9	11	53	1.30		0.68	0	4	23	0	7	w.		R. Wuest.
Macdonald	Siskiyou	3,410	10	39.3		77	20	16	9	7 <sup>a</sup>	5.30		2.08	11.0	9	11	6	13	n.		F. F. Spencer.
Madeline	Lassen	4,823	10	32.8		76	1	0	10	43	1.34		0.50	10.0	7	9	0	21	sw.		Butte Valley Land Co.
Magalia	Butte	2,321	11	47.0	-1.8	78	1	29	15	35	5.27	-1.38	3.09	0	8	16	7	7	n.		Butte Co. & R. Co.
Mammoth Tank	Imperial	257	37	62.7	-0.1	91	1	40	13	37	0.00	-0.11	0.00	0	0	27	1	2	nw.		Southern Pacific Co.
Maricopa	Kern	640	4	53.2		88	1	29	15	42	0.08		0.04	0	4	17	6	7	sw.		Producers Trans. Co.
Marysville	Yuba	67	44	55.4	-1.0	83	3	30	12	38	0.76	-1.49	0.61	0	3	16	0	14	se.		Southern Pacific Co.
Mecca	Riverside	-185	9	59.5		89	1	27	15	48	0.15		0.15	0	1	21	6	3	se.		E. A. Palmer.
Merced	Merced	173	41	52.0	-3.4	80	1	26	12	25	0.19	-1.02	0.11	0	2	17	8	5	nw.		Santa Fe Co.
Middlewater	Kern	863	4	53.6		95	1	31	11 <sup>a</sup>	50	0.02		0.02	0	1	6	12	12	nw.		Producers Trans. Co.
Mill Creek-1	Amador	2,500	8	50.2		75	17	27	11	38	1.87		0.83	0	6	10	14	6	n.		Cal. Gas and Electric Co.
Mill Creek-2	San Bernardino	2,950	1	58.2		83	1	35	14	32	1.45	+0.16	1.03	0	3	16	7	7	n.		So. Cal. Edison Co.
Milton (near)	Calaveras	660	24	54.3	-1.3	78	1	32	13 <sup>a</sup>	24	0.35	-1.88	0.22	0	4	17	9	4	w.		J. H. Southwick.
Minaeral	Tehama																				U. S. Forest Service.
Modesto	Stanislaus	90	43	52.3	+3.5	75	2	30	12		T.	-1.36	T.	0	0	28	0	2	w.		Southern Pacific Co.
Mokelumne Hill	Calaveras	1,550	22	52.3	+0.8	78	1	34	10	28	1.07	-2.65	0.70	0	4	12	0	12	n.		C. E. Finkle.
Montague	Siskiyou	2,450	27	41.5	-2.9	66	1	14	7	39	1.80	-0.04	0.66	0	10	2	15	13	sw.		I. E. De Boy.
Monterey	Monterey	15	50	54.0	-0.3	70	1	40	11 <sup>a</sup>		0.71	-0.84	0.46	0	2	26	3	3	se.		Southern Pacific Co.
MOUNT TAMALPAIS	Marin	2,375	16	48.9	-1.7	70	1	34	10	17	1.28	-4.14	0.55	T.	8	10	7	13	nw.		U. S. Weather Bureau.
Napa City	Napa	20	38	55.3	+4.5	89	11	28	16 <sup>a</sup>	51	0.42	-2.13	0.38	0	2	9	20	1	sw.		Alex Hill.
Napa (S. H.)	do	60	37	54.1 <sup>b</sup>	0	71 <sup>b</sup>	11	35 <sup>b</sup>	28	29 <sup>b</sup>	0.80	-1.69	0.38	0	4	9	11	2	sw.		A. R. Edgar.
Needles	San Bernardino	477	23	55.4	-5.3	86	4	32	21	40	0.60	+0.18	0.60	0	1	30	0	0	sw.		Santa Fe Co.
Nellie	San Diego	5,350	6	51.3		73	11	29	10 <sup>a</sup>	26	2.32		0.80	3.0	4	22	3	5	se.		N. H. Hargrave.
Nevada City	Nevada	2,850	23	47.5	-0.3	80	1	20	13	44	3.61	-2.58	1.63	0.5	7	12	11	7	sw.		S. W. Marsh.
Newhall **	Los Angeles	1,200	38	54.4	-0.4	81	19 <sup>a</sup>	27	12		0.76	-0.61	0.40	0	3	24	1	5	n.		Southern Pacific Co.
Newman	Stanislaus	91	26	55.6	-0.5	85	5 <sup>a</sup>	27	15	54	0.10	-1.02	0.08	0	2				n.		E. S. Wengenheim.
North Bloomfield	Nevada	3,214	18	45.2	-2.9	72	1	20	11	31	2.97	-3.54	1.40	7.0	3	9	5	16	w.		J. R. McIntosh.
North Fork	Madera	3,000	11	48.2		76	3	25	11 <sup>a</sup>	40	1.48	-0.97	0.63	0	3	13	15	2	nw.		U. S. Forest Service.
Oakdale **	Stanislaus	156	21	52.6	+1.7	75	1	33	12		0.31	-1.45	0.15	0	3	16	10	4	sw.		Southern Pacific Co.
Oak Grove	San Diego	2,751	9	45.4		69	21 <sup>a</sup>	23	25	30	0.80	-0.04	0.50	0	4	15	8	7	w.		U. S. Forest Service.
Oakland	Alameda	35	39	53.8	0	69	1	39	11 <sup>a</sup>	20	0.90	-1.92	0.40	0	5	10	1	3	sw.		Chabot Observatory.
Oceanside	San Diego	60	5	57.3		78	28	41	12	34	0.65		0.87	0	2	17	5	8	sw.		H. D. Brodie.
Ojai Valley	Ventura	900	9	58.0		90	18	28	14	50	0.69		0.52	0	3	21	8	1	sw.		W. H. Duncan.
Orland	Glenn	254	33	53.0	-3.4	80	1	31	14	35	1.35	-0.86	1.02	0	4	13	5	12	n.		U. S. Rec. Service.
Orleans	Humboldt	520	12	49.6	-3.3	70	1	34	14	25	9.18	+0.52	1.37	0	18	4	2	24	n.		F. T. Hale.
Oroville (near)	Butte	250	31	53.8	-2.1	80	1	33	11 <sup>a</sup>	22	2.02	-1.45	1.05	0	5	5	2	23	se.		E. D. Fairchild.
Pacific	El Dorado	3,400																			U. S. Forest Service.
Palm Springs **	Riverside	584	26	59.4	-5.0	90	1	40	26		T.	-0.30	T.	0	0				w.		Southern Pacific Co.
Pasadena	Los Angeles	827	25	57.4	-1.7	86	19	34	14	42	2.03	+1.63	1.75	0	3	20	7	3	sw.		E. D. Sorver.
Paso Robles	San Luis Obispo	800	28	51.2	-0.3	85	11	20	14	55	0.24	-0.96	0.24	0	1	21	5	4	nw.		Dr. F. W. Sawyer.
Peachland	Sonoma	190	19	52.1	-1.0	83	1	30	7	35	2.45	-2.41	1.32	0	9	16	11	3	sw.		E. H. Parnell.
Petaluma	do			51.8		82	1	27	13	48	0.83	-1.83	0.36	0	6	8	19	3	w.		John Landis.
Phoenix Dam	Tuolumne	2,500	1			80	3	28	29 <sup>a</sup>	38	1.30		1.02	0	2				n.		Jerome Ghiorso.
Placerville	El Dorado	1,575	26	45.4	-1.7	80	1	44	12	24	2.19	-0.85	1.26	0	4	14	5	7	w.		A. Baring Gould.
Point Loma	San Diego	302	9	58.5		78	17	42	12 <sup>a</sup>	28	0.84	-0.32	0.41	0	6	23	3	3	se.		Fred J. Dick.
POINT REYES	Marin	490	23	53.2	-0.7	65	19	44	9	16	0.72	-2.23	0.41								

Climatological Data for November, 1915.—Continued.

Main climatological data table with columns for 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, Precipitation 0.1 inch or more, Clear, Partly cloudy, Cloudy), Prevailing direction of wind, and Observers.

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 NOVEMBER.

(MEAN MONTHLY TEMPERATURE FOR THE STATE.)

Table comparing mean monthly temperature for the state from 1897 to 1906.

(AVERAGE PRECIPITATION FOR THE STATE.)

Table comparing average precipitation for the state from 1897 to 1906.

DELAYED REPORTS.

Table of delayed reports for November and October, listing stations, months, temperatures, and total precipitation.









Daily Temperature for November, 1915.

Table with columns for Stations, 1-31, and Mean. Rows list various California locations such as Alturas, Bakersfield, Barstow, etc., with their corresponding daily temperature readings.

**Snowfall Data. [In inches.]**

WATERSHED, COUNTY, STATION.	Total snow-fall.	Water equivalent.	Am't on ground 15th.	Am't on ground 31st.	Compr'd with normal.
<b>Klamath Watershed.</b>					
<i>Siskiyou County.</i>					
Gilta .....	1		0	0	
Yreka .....					
<i>Trinity County.</i>					
Hayfork .....	1		0	0	
Ruth .....	5		0	0	
<i>Humboldt County.</i>					
Weitchpec .....	0		0	0	
<b>Mountain Lakes.</b>					
<i>Modoc County.</i>					
Cedarville .....	10		0	0	+ 4
Fort Bidwell .....	11		2	0	
<i>Lassen County.</i>					
Eagle Lake .....	5		0.5	0	+ 1
Fredonia .....					
Madeline .....					
Susanville .....					
<i>Tehama County.</i>					
Mineral .....					
<i>Nevada County.</i>					
Boca .....	14			0	+ 4
Truckee .....	16		4	1	+ 7
<i>Inyo County.</i>					
Bishop Creek .....	T.		0	0	
Lone Pine .....	0		0	0	
Wells Meadow .....					
<b>Sacramento Watershed.</b>					
<i>Siskiyou County.</i>					
Dunsuir .....	2		0	0	
McCloud .....	11		1	0	+ 9
Sisson .....	9		0	0	+ 5
<i>Modoc County.</i>					
Alturas .....	11		0	0	+ 8
<i>Shasta County.</i>					
Burney .....	4		0	0	+ 2
<i>Plumas County.</i>					
Buck .....	33		11	3	+10
Canon Dam .....	15		3	1	
Chester .....	21		7	0	+12
Clover Valley .....	21		13	0	
La Porte .....	23		8	1	+ 7
Portola .....	26		10	0	
Quincy .....	10		2	0	+ 7
<i>Butte County.</i>					
De Sabla .....	8		T.	0	
Yaskip .....	27		13	T.	+13
Stirling City .....	13		0	0	+12
West Branch .....	10		2	0	+ 9
<i>Yuba County.</i>					
Camptonville .....	7		0	0	+ 6
<i>Sierra County.</i>					
Bunker Hill .....	38		16	8	
Dorsey's .....	10		3	0	+ 9
Downieville .....	17		7	0	+14
Sierra City .....	11		4	0	+ 8
Sierraville .....	40		24	4	+13
<i>Nevada County.</i>					
Bowman's Dam .....	29				+13
Deer Creek .....	17		4	0	+14
Fordyce Dam .....	22		7	9	+12
Lake Spaulding .....	20		12	2	+ 9
<i>Placer County.</i>					
Blue Canon .....	16		7	0	+10
Cisco .....	25		4	0	+ 2
Emigrant Gap .....	23			0	+10
Summit .....	37		8	6	+ 3
<i>El Dorado County.</i>					
Pacific .....					
<b>San Joaquin Watershed.</b>					
<i>Alpine County.</i>					
Tamarack .....	21		4	3	-25
<i>Tuolumne County.</i>					
Center Ranger Station .....	0		0	0	
Hetch Hetchy .....	2		0	0	+ 1
Lake Eleanor .....	6		0	0	- 2
<i>Mariposa County.</i>					
Yosemite .....	6		T.	0	+ 2
<i>Fresno County.</i>					
Cascade .....	6		0	0	
Hume .....					
Huntington Lake .....	12		5	0	
<i>Tulare County.</i>					
Hot Springs .....	0		0	0	
Springville .....	4		0	0	0
<b>Mountains of Southern California.</b>					
Bear Valley Dam .....	5		0	0	- 3
Converse Nursery .....	5		0	0	- 6
Holcomb .....	2		T.	0	- 5
Squirrel Inn .....	2		0	0	+ 1
Seven Oaks .....	3		0	0	+ 2
Nellie .....					
Julian .....	4		0	0	

**SNOWFALL IN THE MOUNTAINS.**

Snow fell in the mountain regions of all portions of the State during November and the amounts were greatly in excess of the average for that month. It was heaviest in the northern Sierra and at many stations two or three times the usual amounts were reported. The greater portion of the snow fell during the storm of 8-10; it was very wet and soon melted except at the higher stations. Snow also fell in very small amounts on several days during the third decade in the mountains of the northern portion of the State. At the close of the month the snow had all disappeared from the ground except at a few of the stations at over 6,000 feet in the northern Sierra.

**COMPARATIVE SNOWFALL DATA FOR NOVEMBER.**  
(Amount on the Ground.)

	FORDYCE DAM.			SUMMIT.			TAMARACK.		
	1st.	15th.	30th.	1st.	15th.	30th.	1st.	15th.	30th.
1906 .....	0	0	3	0	1	5	5	11	54
1907 .....	0	0	0	2	0	2	0	3	0
1908 .....	0	0	12	2	0	27	0	0	29
1909 .....	6	32	5	4	47	4	6	55	22
1910 .....	0	0	6	0	3	9	0	5	8
1911 .....	0	12	5	0	16	2	0	31	6
1912 .....	5	9	6	2	4	T.	1	17	3
1913 .....	0	15	34	0	15	32	0	11	36
1914 .....	0	0	9	0	0	12	0	0	11
1915 .....	0	7	9	0	8	6	0	4	3

# Total Precipitation, Inches, November, 1915.





The influence of the diversified topography of California upon its precipitation is shown by the lines of equal rainfall in inches, on the accompanying relief map.