

CLIMATOLOGICAL DATA

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CALIFORNIA SECTION
C. E. NORQUEST

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GENERAL SUMMARY

Typical summer weather conditions prevailed over California during the month of July, with only minor variations disturbing the pattern of hot, clear weather in the interior, except for an occasional thunderstorm in the mountains or over the desert regions, and fog or low clouds in the morning along the coast. A low pressure area persisted over the Colorado River Valley with a trough of low pressure usually extending into the Great Central Valley. Fog and low clouds were general along the coast during the first seven days, except for the extreme north coast where clear skies prevailed. By the morning of the 8th, the fog extended along the entire coast, and a low pressure area had formed aloft off central California. By the following day, this upper LOW had developed sufficiently to produce considerable cloudiness and scattered showers over most of the State north of the Tehachapi Mountains. Thunderstorms were numerous on the 8th and in the next few days, and there were many over the southeast interior in the latter part of the month. Amounts of precipitation were usually small but more than one inch of rain fell at some places in the mountains. Fog was at a minimum along the south coast on the 10th and 11th, along the north coast on the 16th and 17th, and along the entire coast from the 19th to the 25th. Eureka received much more sunshine than is usual for July; San Francisco and San Diego received considerably less; and at other first-order stations the duration of sunshine was near the normal.

Total precipitation for the month averaged just exactly normal for the State as a whole, slightly above normal in the northeast interior and in the San Joaquin drainage basin, but below normal elsewhere. Many stations did not have any rain; where precipitation did occur, it was as showers accompanying thunderstorms in the interior and as drizzle from low clouds along the coast. A little of the precipitation was in the form of hail at stations in the mountains.

The most noteworthy feature of the weather in California during July was the high average temperature. In all the preceding months in 1945, the average temperature for the State was below normal, but in July it was quite the contrary. The average mean temperature for the State as a whole (74.6°) was the highest since 1933 (74.8°). The temperature in July was also in sharp contrast to the temperature in July of last year, which was 70.7° , the lowest since 1916. While the highest temperature occurred at most stations around the 26th, and the lowest around the 19th, the high average temperature was not due to a few excessively hot days, but rather to continu-

ously warm weather. In all sections of California July, 1945 was the warmest July in several years; since 1933 in the Sacramento Valley; since 1936 in the San Joaquin Valley; and since 1942 in southern California.

From an agricultural viewpoint, the weather in July was favorable. Crops had been backward because of subnormal temperature, but their development was stimulated greatly by the warm weather which began in the latter part of June and continued through July. Cotton, beans, rice, tomatoes, grapes, and other crops which thrive in warm weather were especially benefited. Harvesting of wheat, barley, oats, and flax was in progress throughout the month. Pastures and ranges remained in good condition at high elevations; at low elevations pastures were dry except where irrigated. Feed was ample in nearly all districts and livestock thrived. Deciduous fruits developed rapidly. While some sunburning was reported, the injury was not greater than usual in July. Harvesting of cherries was completed early in the month, and the apricot harvest was practically completed by the end. Gravenstein apples, early grapes, peaches, pears, and plums were being harvested. In southern California, grapefruit, lemons, and Valencia oranges were still being picked at the end of the month. Watermelons, cantaloupes, and tomatoes were harvested in the San Joaquin

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TEMPERATURE

The average monthly mean for the State, based on the records of 243 stations, was 74.6° , or 1.2° above the 49-year average. By drainage basins the monthly averages and departures from normal were as follows: North Coast Drainage, 68.6° and $+0.8^{\circ}$; Sacramento Drainage, 76.3° and $+2.9^{\circ}$; Northeastern Interior Basins, 64.6° and -1.3° ; Central Coast Drainage, 66.8° and $+2.0^{\circ}$; San Joaquin Valley Drainage, 78.9° and $+1.4^{\circ}$; South Coast Drainage, 71.9° and $+0.1^{\circ}$; and Southeastern Desert Basins, 86.8° and $+1.9^{\circ}$. Monthly means ranged from 55.2° at Ellery Lake to 103.9° at Cow Creek, and monthly extremes from 31° at Boca on the 25th to 125° at Cow Creek on the 26th.

PRECIPITATION

The average monthly precipitation for the State, based on the records of 325 stations, was 0.07 inch, or just the 49-year average. By drainage basins the averages and departures from normal, in inches, were as follows: North Coast Drainage, 0.02 and -0.10 ; Sacramento Drainage, 0.05 and -0.03 ; Northeastern Interior Basins, 0.46 and $+0.08$; Central Coast Drainage, T. and -0.01 ; San Joaquin Valley Drainage, 0.03 and $+0.01$; South Coast Drainage, 0.08 and -0.01 ; and Southeastern Desert Basins, 0.11 and -0.07 . The greatest monthly total was 1.96 inches at Seven Oaks; the least 0.00 at 138 stations. The greatest 24-hour amount was 1.49 inches at Seven Oaks on the 31st. No snow was reported during the month.

Total Precipitation, July 1945



Climatological Data for July 1945

Table with columns: Stations, Counties, Elevation, Length of record, Temperature (Mean, Departure from normal, Highest, Date, Lowest, Date), Precipitation (Total, Departure from normal, Greatest in 24 hours, Date, Snowfall, With precip., Clear, Partly cloudy, Cloudy), Prevailing direction of wind, Observers. Rows are categorized by drainage basins: NORTH COAST DRAINAGE, SACRAMENTO DRAINAGE, NORTHEASTERN INTERIOR BASINS, and CENTRAL COAST DRAINAGE.

Explanatory notes at bottom of page 80.

Climatological Data for July 1945-Continued

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

Explanatory notes at bottom of page 80.

Daily Temperatures for July 1945

Table with columns for Stations, Day of Month (1-31), and Mean. Rows list various California locations such as Auburn Airport, Bakersfield Airport, Blythe, Brooks, Chico, Cloverdale, Colusa, Del Monte, Elsinore, Escondido, Eureka, Fort Bidwell, Fresno, Greenland Ranch, Hanford, Hetch Hetchy, Hollister, Imperial, Indio, Lemon Cove, Los Angeles, Los Banos, Los Gatos, McCloud, Merced, Modesto, Montague Airport, Needles A. S., Oakland Airport, Orland, Oroville, Palmdale, Paso Robles, Pomona, Porterville, Red Bluff (A. P.), Redding, Redlands, Rocklin, Sacramento, San Bernardino, San Diego, San Francisco, San Jose, San Luis Obispo, Santa Barbara, Santa Rosa, Soda Springs, Stockton, Tehachapi, Ukiah, Vacaville, and Yosemite Nat'l Park.

Explanatory notes at bottom of page 80.

Daily Dry Bulb Temperatures and Relative Humidity for July 1945

Table with columns for Stations, Day of Month (1-31), and Mean. Rows list various California locations such as Backus Ranch, Bakersfield A. P., Beaumont A. S., Blythe Airport, Burbank Airport, Coalinga A. S., Eureka, Fort Bragg A. S., Fresno (A. P.), Imperial, Indio, Lick Observatory, Livermore A. S., Los Angeles, Mt. Shasta A. S., Mt. Wilson A. S., Needles A. S., Oakland Airport, Petaluma, Red Bluff (A. P.), Sacramento A. P., San Diego (A. P.), San Francisco A. P., San Jose, Santa Barbara A. S., Santa Maria A. P., and Silver Lake A. S., each with multiple temperature and humidity readings for each day.

Explanatory notes at bottom of page 80.

Daily evaporation (inches) and wind movement (miles) for July 1945

Table with columns for Stations, Data, and Day of Month (1-31). Rows include Backus Ranch, Beaumont, Boca, Camp Pardee, Chula Vista, Davis, Fall River Mill, Friant, Lodi, Newark, and Tahoe.

*Observations taken at 6:30 a. m.; **7:00 a. m.; ***7:30 a. m.; §6:00 p. m.; §§10:30 p. m. Included in the next following entry. Wind movement by 4-cup anemometer.

COMPARATIVE DATA FOR JULY

Table with columns for Year and Temperature (Mean, Highest, Lowest), Precipitation (Average), and Number of days (Clear, Partly cloudy, Cloudy).

† Less than one-half.

OBSERVERS' NOTES

Fort Bragg: More or less high fog overhead each morning, clearing in fore part of day. Claude A. King

PRESSURE, WIND, HUMIDITY, SUNSHINE, AND DEGREE DAYS

Table with columns for Stations, Sea-level pressure (extremes), Wind (Average velocity, Maximum velocity, Direction), and Relative humidity (4:30 a. m., 10:30 a. m., 4:30 p. m., Percentage of sunshine). Rows include Bakersfield Airport, Eureka, Fresno, Los Angeles, Oakland Airport, Red Bluff, Sacramento, Sandberg, San Diego, San Francisco, and Santa Maria.

† Also on other dates. ‡ Los Angeles and San Francisco, local noon. § Pressure and humidity data for Airport Station; other data for City office.

OBSERVERS' NOTES-Continued

St. Helena: Apples were harvested during the month. Sugar and Imperial prunes are coloring up nicely; heavy crop in prospect. Edwin L. Paulson

Brooks: Warmest day July 26th (113°); coolest night July 21st (49°). Earl Smith

Gridley: This month has been much warmer than July of last year. W. K. Elmer

Placerville: At Placerville and Pacific, four distinct earthquake shocks were felt, beginning at 3:52 p. m. on the 6th. A. Martin

Coleville (near): On July 26th we had the highest temperature recorded yet this year, 98°. Albert V. Shatzel

Edison (near): On the evening of July 26th, after 5:00 p. m., it became cloudy, and looked as if a thunderstorm would strike any minute, but it did not develop. Around 6:30 p. m. the air became a dead calm, and there was no breeze of any kind until close to 10:00 p. m. During this time it was cloudy, clearing around 11:00 p. m., after a light breeze sprang up.

Southern California Edison Co., Ltd.

DATES OF MISCELLANEOUS PHENOMENA

THUNDERSTORMS—Coleville (near), 1, 5, 6, 7, 8, 9, 10, 11, 13, 16, 27; Bridgeport Dam, 4; Conway Summit, 4, 5, 6, 7, 9, 10, 11, 13, 14, 16, 27; Bishop, 4, 6, 7, 9, 11, 14, 24; South Lake, 4, 28; South Entrance Yosemite National Park, 6; Three Rivers, 6, 7, 8; Ellery Lake, 6, 7, 11, 12, 15, 16, 27, 28; Lake Arrowhead, 6, 19; Gem Lake, 6, 27, 28; Woodford's, 7; Tamarack, 7, 8, 9, 11, 13, 15; Pattiway, Seven Oaks, 7, 8, 30, 31; Cedar Grove, 7, 27, 28; Dunlap, 7, 28; Burbank Airport, Covina, Fall River Mills (near), Fullerton, Iron Mountain, Long Beach, Los Angeles, Los Angeles Airport, Pasadena, Sandberg, Sierra Madre, Silver Lake A. S., Susanville A. S., Tehachapi, Westwood, 8; Alturas, 8, 9, 10; Montague Airport, Yreka, 8, 9, 10, 11, 12, 13; Mount Shasta, 8, 9, 11, 12, 13; Blackbear, 8, 9, 11, 12, 14; Twin Lakes, 8, 9, 13, 27; Daggett Airport, 8, 9, 16, 30, 31; Kneeland (near), 8, 10; Truckee R. S., 8, 11; Chester, 8, 12, 14; Sierraville R. S., 8, 13; Yucca Grove, 8, 16, 19, 26, 31; Blythe Airport, 8, 19; Eagle Mountain, 8, 30, 31; Squirrel Inn—2, 8, 31; China Flat, Huntington Lake, Miranda (near), Red Bluff, Victorville, Weaverville, 9; Steele Swamp, 9, 10; Fort Jones R. S., 9, 10, 11, 12, 13, 14; Happy Camp, 9, 10, 11, 28; McCloud, Mount Shasta A. S., 9, 11; Echo Summit, 9, 11, 13; Fort Bidwell, 9, 11, 14, 28; West Point, 9, 13; Springville (near), 9, 26; Parker Reservoir, 9, 29, 30, 31; Tulelake (near), 10, 11, 13; Sonora, 12; Cedarville, Lake City, 14; Imperial, 19; Beaumont A. S., 25, 31; Backus Ranch, Grant Grove, 26; Cow Creek, 26, 27, 28; Clovis (near), Haiwee, 27; Cuyamaca, 27, 30; Lake Sabrina, 28; Blythe, 30; Alpine, Palomar Mountain, 30, 31; El Capitan Dam, Mill Creek—2, Twenty-nine Palms, Vista, 31.

HAIL—South Lake, 6; Conway Summit, 7; Susanville A. S., 8; Echo Summit, 9; Lake City, 15; Coleville (near) 16.

ERRATA

Correct 1945 Monthly Climatological Data to read:

May: Page 51—Boca: Greatest 24-hour rainfall and date, 0.64 on 6th. Page 52—Springville (near): Greatest 24-hour rainfall, 0.58 on 19-20. Mount Wilson A. S.: Maximum temperature and date, 74° on 16th. San Jacinto: Minimum temperature and date, 37° on 26th. Page 57—Red Bluff (Airport): Maximum temperature on 14th, 68°. Page 60—Red Bluff (Airport): Highest pressure, 30.15.

June: Page 64—San Francisco Airport: Mean temperature, 61.3°; departure, +3.4°.

GENERAL SUMMARY—Continued

Valley in increasing volume while shipments from the Imperial Valley declined. Potato digging was active in many sections. At the end of the month, planting of fall tomatoes was in full progress in Kern County, while cabbage, broccoli, and other winter crops were being planted elsewhere.

E. E. E.

OBSERVERS' NOTES—Continued

Lindsay: Warmest July since 1938 when mean maximum temperature was 102.5° as compared with 102.4° this month.

Basil Prior

Lodi: Mean monthly temperature highest since 1937. Some color in Tokay grapes at close of month; crop 10 to 12 days late.

Frank H. Watson, Jr.

Bonita: A very cool July; noon temperatures several degrees below normal; generally hazy, muggy; nights warm.

R. M. Allen

Fullerton: Thunder and lightning very severe on the 8th.

Merrill C. Royce

Backus Ranch: The month began and ended with practically the same mean temperatures. This has been the hottest July since the record began in 1936.

O. J. Backus

Cow Creek: The mean maximum temperature (118.1°) nearly equalled the record set in July, 1942 (118.3°). The humidity was very high for Death Valley.

Edward E. Ogston