SECTION 8
SHELF
ITEM .2

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WATER RESOURCES

EARL WARREN, Governor
C. H. PURCELL, Director of Public Works
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REPORTS OF DIVISION OF WATER RESOURCES PREPARED PURSUANT TO SECTION 228, ARTICLE 2, CHAPTER 2, DIVISION 1 OF WATER CODE

# WATER CONDITIONS IN CALIFORNIA

## AS OF

# APRIL 1, 1951

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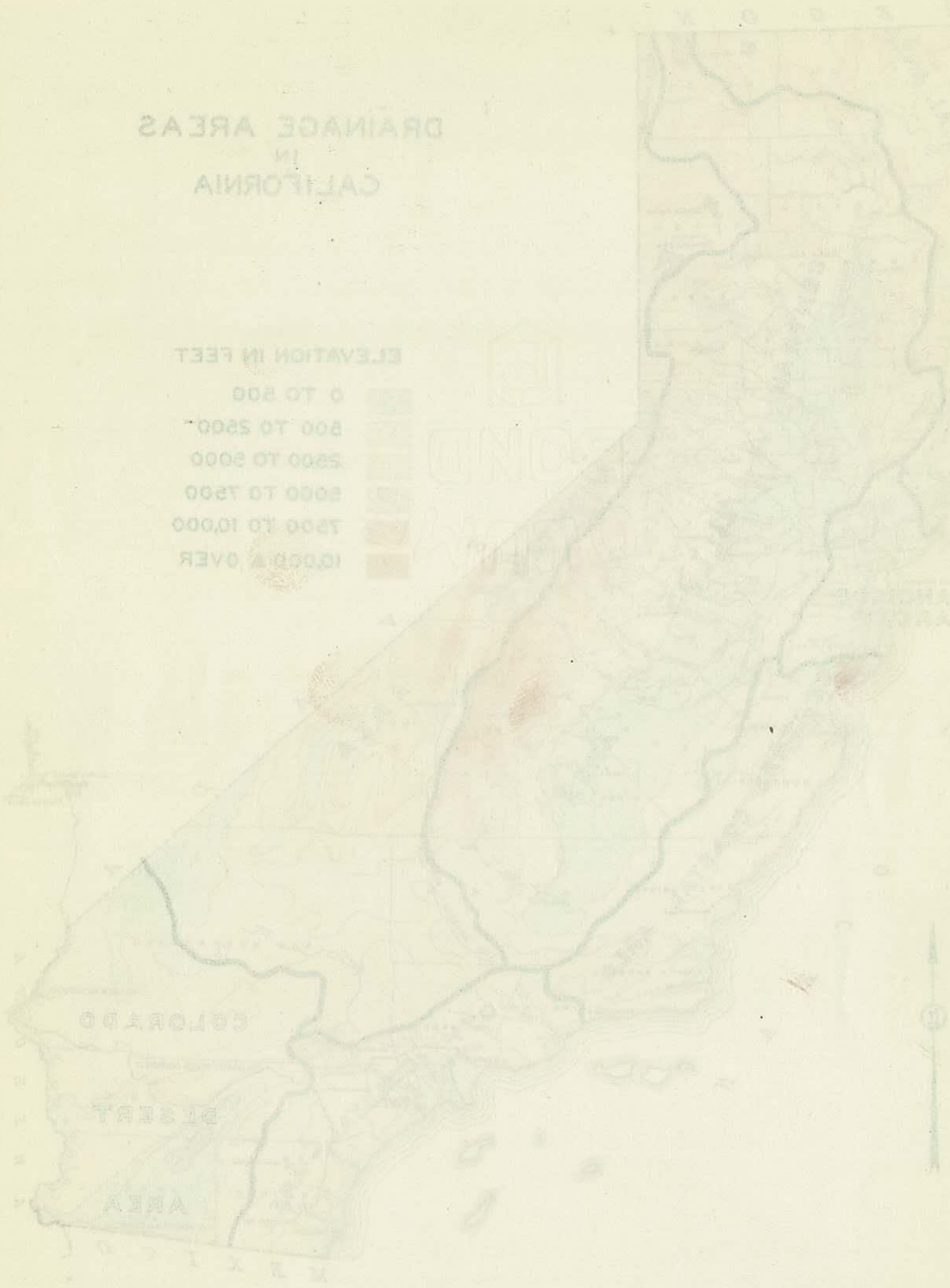

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# CALIFORNIA COOPERATIVE SNOW SURVEYS

## Agencies Cooperating in the Collection of Data Contained in this Bulletin

### Governmental Agencies

#### State

- California State Department of Public Works
  - Division of Water Resources
- Nevada Cooperative Snow Surveys
- Oregon Cooperative Snow Surveys

#### Federal

- Department of Agriculture
  - Forest Service (14-National Forests)
  - Soil Conservation Service
- Department of Commerce
  - Weather Bureau
- Department of the Interior
  - Bureau of Reclamation
  - Geological Survey. Water Resources Branch
  - National Park Service (3 National Parks)
- War Department
  - Corps of Engineers

### Public Utilities

- California Electric Power Company
- Pacific Gas and Electric Company
- Sierra Pacific Power Company
- Southern California Edison Company, Ltd.
- The California Oregon Power Company

### Municipalities

- City of Los Angeles
  - Department of Water and Power
- City of San Francisco
  - Public Utilities Commission

### Organized Public Agencies

- Los Angeles County Flood Control District
- East Bay Municipal Utility District
- Tulare Lake Basin Water Storage District
- Buena Vista Water Storage District
- Kaweah Delta Water Conservation District
- Kaweah River Association
- St. Johns River Association
- Kings River Water Association
- Nevada Irrigation District
- Turlock Irrigation District
- Modesto Irrigation District
- Merced Irrigation District
- Terra Bella Irrigation District
- Vandalia Irrigation District

### Private Organizations

- Kern County Land Company
- The San Joaquin Canal Company

## FOREWORD

This is the third report on water conditions issued this winter by the Division of Water Resources. It summarizes statewide water conditions as of the first of April.

In the preparation of this report, data and assistance were furnished by the many agencies cooperating in the California Cooperative Snow Surveys program as well as the operators of the many reservoirs which store water for summer use. Agencies cooperating in the collection of precipitation and snow survey data contained in this Bulletin are listed immediately following the table of organization. The reservoir operators who furnished data for the table entitled "Water in Storage In Major California Reservoirs" are included in that tabulation.

April 10, 1951

# Water Conditions in California
# As of April 1, 1951

## INTRODUCTION

To date the 1950-51 water year has been marked by damaging floods in the Central Valley Area of California during November and December, a deficient snow year in the Sierra, and a seventh consecutive year of drought in the South Coastal area.

The objective of this report is to summarize the water conditions as of April 1, 1951 and to set forth the Division of Water Resources' forecast of this season's streamflow that is yet to come in the snowfed streams of the Sierra. The subject is presented herein under the following section headings:

1. Statewide Summary of Water Conditions
2. Precipitation
3. Snowpack
4. Surface Reservoir Storage
5. Ground Water
6. Streamflow

## SECTION 1

## STATEWIDE SUMMARY OF WATER CONDITIONS

California's 1951 summer water supply will be deficient.

The seasonal precipitation to date south of Tehachapi averages only about 40% of normal. In this area, on parts of the San Gabriel and Santa Ana watersheds precipitation is below 30 per cent of the long term mean. North of Tehachapi, the rains have been more plentiful and north of a line roughly determined by Haiwee in the Owens Valley, Fresno in the Central Valley, and Monterey on the coast, normal expectancy has been exceeded. Farther to the north, in the vicinity of Yreka and Happy Camp in Siskiyou County, 150% of normal precipitation has been reported. However, much of the rain that occurred in the areas north of Tehachapi came during the warm intense rains of November and December and subsequently ran to the ocean. These heavy rains will have little beneficial effect on summer stream flow.

Snowpack throughout the Sierra is definitely deficient. On the Kern and Kaweah watersheds in the South San Joaquin Valley less snow exists as of April 1 than for the years 1931 and 1934, which were the driest summer seasons measured since comprehensive snow survey coverage began in 1930. Snowpack conditions improve farther to the north, with the highest percentage of normal, (74%), occurring on the upper Sacramento watershed.

The surface reservoir storage for the South Coastal and Central Coastal areas of the state is below normal for this date, but in the northern and central areas it is at or above average level.

In those sections of the South Coastal Area and the southern portion of the Lahontan Area dependent upon ground water draft, further accelerated lowering of ground water levels will be experienced. This will occur in an area already heavily pumped during the previous six years of drought. In that area of the Central Valley south of the delta, heavy drafts will also be placed on ground water supply. In the valley area of the Kings, Kaweah and Kern rivers lowering of ground water levels should be expected due to the deficient summer flows, lack of available reservoir storage, and heavy draft on the ground water supplies. In areas farther to the north, the ground water table has reacted favorably to the precipitation received so far this season and levels now stand above those of the spring of 1950. The only exceptions are areas on the Central Valley floor in Placer County, the Farmington-Collegeville in San Joaquin County, the Upper Lake section of Lake County, and in a localized area in the vicinity of Palo Alto in Santa Clara County.

Flows of the major streams of the state have averaged well above normal for the period October 1 through March 31. However, with the below normal snow pack now in evidence and in the absence of heavy late season storms, April-July stream flow will be definitely deficient. The greatest deficiencies are expected on streams that experienced their greatest flood crests of record following the storms of November and December. The Kern and the Kaweah rivers in the southern portion of the Sierra, now have extremely small amounts of snow on their upper watersheds, and runoff expectancy for the summer season is less than in 1924 or 1934--the lowest summer flow years of record. Farther to the north stream flow expectancies are more favorable with the highest percentage of normal expected on the upper Sacramento where 80 per cent of the mean April-July flow should occur.

## SECTION 2

## PRECIPITATION

### North Coastal Area

Precipitation in this area is well above normal seasonal with the extreme northern portion having received 150% of the long term average. The precipitation of 128% of normal at Eureka is representative of the mean condition for this area.

### San Francisco Bay Area

Heavy rains fell here during November and December, but since the first of the year only light amounts have been recorded. The seasonal rainfall to date is above normal but the relatively unbroken period of fair weather since December has created a serious lack of moisture throughout the area.

### Central Coastal Area

Subnormal precipitation conditions exist in the southern portion of this area in the vicinity of Santa Barbara. This is the second consecutive year of critical shortage in this locality. Farther to the north precipitation conditions are more favorable and in the vicinity of Santa Cruz-Monterey it is 110% of normal.

### South Coastal Area

This area has received the lowest per cent of normal precipitation for the state as of April 1st. The reliance upon underground water, and need for imports from other basins will be great in this section during the summer period.

### Central Valley Area

Water supply conditions for the Central Valley are not as favorable as the heavy seasonal precipitation to date would indicate. An abnormally large part of the storms that caused floods in this area during November and December were of the warm type. During January much of the precipitation again occurred from the same warm type storms with the result that the snow line continued at a much higher elevation than usual. Since March 9 no substantial amounts of rain have fallen in this area and conditions as of April 1 can best be described as those approximating early summer. The tabulation on the page following compares seasonal precipitation to date with snowpack for the major watersheds of the Sierra as well as furnishing precipitation data for watersheds in the South Coastal Area.

### Lahonton Area

Precipitation over the Lahonton Area is characterized by an excess of precipitation in areas north of Lake Tahoe, and a deficiency in the extreme southern portion where only 40 per cent of normal rainfall has been experienced.

TABLE 1

SUMMARY OF SEASONAL PRECIPITATION AND SNOW PACK - APRIL 1, 1951

AVERAGES BY STREAM BASINS

| River Basin | Precipitation over mountain watersheds from July 1, 1950 to April 1, 1951 in per cent of normal to April 1st. | Snowpack as of April 1, 1951 in per cent of normal |
|---|---|---|
| (Upper Sacramento-McCloud - Pit) | 105% | 74% |
| Feather | 127% | 57% |
| Yuba | 151% | 62% |
| Truckee | 151% | 48% |
| Tahoe | 151% | 47% |
| American | 146% | 51% |
| Mokelumne | 143% | 47% |
| Stanislaus | 139% | 39% |
| Tuolumne | 131% | 55% |
| Merced | 132% | 51% |
| Upper San Joaquin | 120% | 51% |
| Kings | 107% | 40% |
| Kaweah | 116% | 27% |
| Kern | 91% | 2% * |
| Los Angeles | 35% | -- |
| San Gabriel | 34% | -- |
| Santa Ana | 37% | -- |
| San Diego County | 49% | -- |

* 2% of normal on courses measured since 1930.

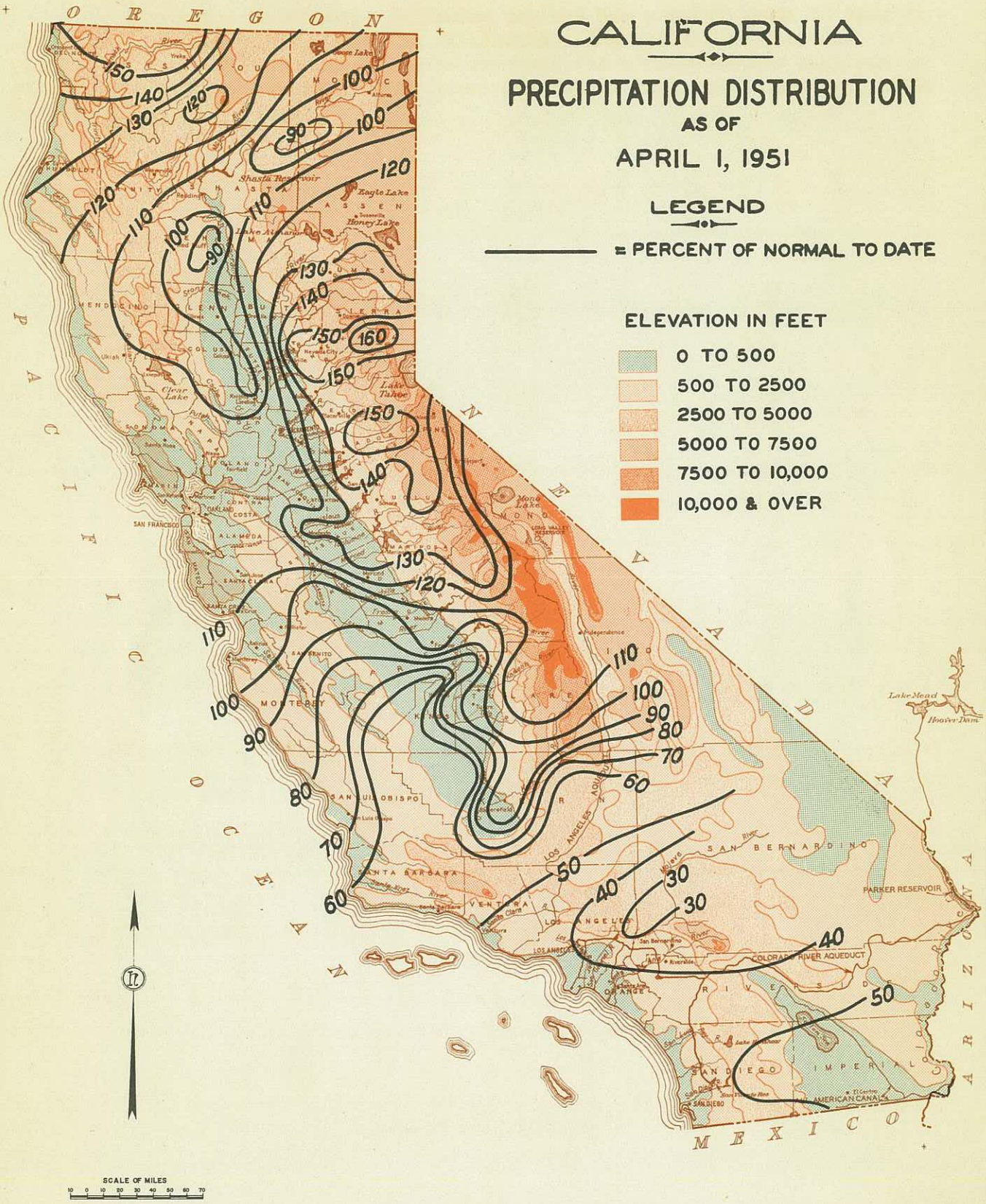
CALIFORNIA
PRECIPITATION DISTRIBUTION
AS OF
APRIL 1, 1951
LEGEND
= PERCENT OF NORMAL TO DATE
ELEVATION IN FEET
0 TO 500
500 TO 2500
2500 TO 5000
5000 TO 7500
7500 TO 10,000
10,000 & OVER
OREGON
NEVADA
ARIZONA
MEXICO
PACIFIC OCEAN
Shasta Reservoir
Eagle Lake
Honey Lake
Lake Tahoe
Clear Lake
Mono Lake
Lake Mead
Hoover Dam
PARKER RESERVOIR
COLORADO RIVER AQUEDUCT
AMERICAN CANAL
SAN FRANCISCO
OAKLAND
SAN DIEGO
SCALE OF MILES

TABLE 2

STATEWIDE PRECIPITATION DATA

AS OF APRIL 1, 1951

| BASIN AND PRECIPITATION STATION | ELEVATION IN FEET | PRECIPITATION DURING MARCH 1951 | | | PRECIPITATION FROM JULY 1, 1950 TO APRIL 1, 1951 | | | Normal Seasonal Precipitation (July to June) Inches [2] |
|---|---|---|---|---|---|---|---|---|
| | | Total (Inches) | Normal (Inches) [2] | In per cent of Normal | Total (Inches) | Normal (Inches) [2] | In per cent of Normal | |
| **North Coastal Area** | | | | | | | | |
| Crescent City | 35 | 6.02 | 8.89 | 68% | 67.24 | 61.90 | 109% | 73.38 |
| Eureka | 43 | 3.94 | 5.44 | 72% | 42.90 | 33.45 | 128% | 39.16 |
| Fort Bragg | 74 | 3.20 | 5.02 | 64% | 38.56 | 33.55 | 115% | 38.14 |
| Ukiah | 650 | 1.88 | 4.71 | 40% | 38.62 | 32.28 | 120% | 36.01 |
| Santa Rosa | 167 | 1.25 | 4.07 | 31% | 29.60 | 26.11 | 113% | 29.53 |
| **San Francisco Bay Area** | | | | | | | | |
| Napa | 60 | 2.09 | 3.36 | 62% | 28.58 | 21.32 | 134% | 23.88 |
| San Francisco | 52 | 1.32 | 2.99 | 44% | 22.42 | 18.76 | 119% | 20.79 |
| Oakland | 440 | 1.46 | 3.39 | 43% | 22.70 | 20.60 | 110% | 23.08 |
| Redwood City | 31 | 1.18 | 3.18 | 37% | 20.30 | 19.53 | 104% | 21.58 |
| San Jose | 95 | .50 | 2.33 | 21% | 12.94 | 12.63 | 102% | 14.22 |
| **Central Coastal Area** | | | | | | | | |
| Santa Cruz | 125 | 3.60 | 4.21 | 85% | 36.18 | 25.82 | 140% | 28.67 |
| Hollister | 284 | .91 | 2.22 | 41% | 13.75 | 11.69 | 118% | 13.19 |
| Salinas | 74 | .80 | 2.31 | 35% | 10.13 | 12.29 | 82% | 13.84 |
| King City | 320 | .21 | 1.82 | 12% | 6.04 | 9.49 | 64% | 10.45 |
| Paso Robles | 740 | .58 | 2.78 | 21% | 9.48 | 14.35 | 66% | 15.72 |
| Santa Maria | 217 | .18 | 2.56 | 7% | 8.31 | 12.81 | 65% | 14.29 |
| Santa Barbara | 120 | 1.20 | 3.20 | 37% | 9.63 | 16.44 | 58% | 17.99 |
| **South Coastal Area** | | | | | | | | |
| Ventura | 50 | .49 | 2.80 | 18% | 5.38 | 14.16 | 38% | 15.22 |
| Los Angeles | 312 | .44 | 2.65 | 17% | 6.43 | 13.51 | 47% | 14.75 |
| San Bernardino | 1094 | .61 | 2.93 | 21% | 6.40 | 14.82 | 43% | 16.89 |
| Santa Ana, P.H. #1 | 2850 | .99 | 4.88 | 20% | 7.93 | 23.13 | 34% | 26.90 |
| Julian | 4220 | 1.95 | 5.49 | 35% | 21.93 | 27.01 | 81% | 31.25 |
| San Diego | 19 | .50 | 1.64 | 30% | 3.97 | 9.25 | 43% | 10.20 |
| Campo | 3000 | 1.12 | 2.85 | 39% | 7.58 | 16.59 | 46% | 18.76 |
| **Central Valley Area** | | | | | | | | |
| Alturas | 4460 | 1.07 | 1.23 | 87% | 8.69 | 9.13 | 95% | 12.08 |
| Redding | 718 | 4.12 | 5.05 | 81% | 36.19 | 32.39 | 112% | 37.89 |
| Chester | 4550 | 1.16 | 4.35 | 27% | 30.66 | 26.89 | 114% | 31.55 |
| Willows | 136 | .07 | 2.35 | 2% | 15.11 | 15.52 | 97% | 17.50 |
| Sacramento | 25 | .84 | 2.46 | 34% | 18.05 | 14.89 | 121% | 16.91 |

2 These are computed 61 year normals for the period 1890-1950, inclusive.

TABLE 2 - STATE WIDE PRECIPITATION DATA - AS OF APRIL 1, 1951 - Cont'd.

| BASIN AND PRECIPITATION STATION | ELEVATION IN FEET | PRECIPITATION DURING MARCH 1951 | | | PRECIPITATION FROM JULY 1, 1950 TO APRIL 1, 1951 | | | 2 Normal Seasonal Precipitation (July to June) Inches |
|---|---|---|---|---|---|---|---|---|
| | | Total (Inches) | 2 Normal (Inches) | In per cent of Normal | Total (Inches) | 2 Normal (Inches) | In per cent of Normal | |
| Central Valley Area Cont'd | | | | | | | | |
| Twin Lakes | 7970 | 2.42 | 7.63 | 32% | 48.22 | 38.94 | 124% | 45.58 |
| Stockton | 15 | 1.68 | 2.21 | 76% | 15.07 | 12.45 | 121% | 14.12 |
| Los Banos | 125 | .57 | 1.40 | 41% | 6.71 | 7.50 | 89% | 8.57 |
| Merced | 173 | .55 | 2.02 | 27% | 12.71 | 10.10 | 126% | 11.60 |
| Yosemite | 3960 | 2.57 | 5.49 | 47% | 41.46 | 30.86 | 134% | 36.23 |
| Fresno | 277 | .31 | 1.66 | 18% | 8.64 | 8.16 | 106% | 9.44 |
| Giant Forest | 6360 | 2.61 | 7.52 | 35% | 48.02 | 36.73 | 131% | 43.92 |
| Kernville | 2565 | .26 | 1.61 | 16% | 6.94 | 9.31 | 75% | 10.25 |
| Bakersfield | 489 | .36 | 1.07 | 34% | 4.36 | 5.03 | 87% | 6.05 |
| Lahontan Area | | | | | | | | |
| Jess Valley | 5400 | 0.93 | 1.61 | 57% | 12.67 | 11.67 | 109% | 15.72 |
| Truckee | 6200 | 1.86 | 4.32 | 43% | 37.64 | 23.45 | 160% | 26.55 |
| Bridgeport | 6473 | .13 | .99 | 13% | 10.10 | 9.06 | 111% | 10.63 |
| Gem Lake | 9120 | .28 | 3.65 | 8% | 16.45 | 22.52 | 73% | 26.55 |
| Bishop | 4108 | T | .72 | 0% | 3.95 | 5.03 | 78% | 5.64 |
| Independence | 3957 | 0.01 | 0.44 | 2% | 7.26 | 4.14 | 175% | 4.59 |

2 These are computed 61 year normals for the period 1890-1950, inclusive.

## SECTION 3

## SNOW PACK

### Central Valley Area

California's snowpack on April 1 was definitely deficient over the entire length of the Sierra with the snowpack averaging only 45% of normal. The range of the individual watersheds was from a high of 75% of normal on the upper Sacramento to below 5% on the Kern River. The percentage of pack on the Kern was determined from courses that have been measured continuously since 1930.

Only at the extreme higher elevations in the Northern Sierra does the snowpack approach normal. However, the effective area wherein such snowpack exists is small. Conditions in the southernmost part of the Sierra, are such that in no year since 1930, has a smaller April 1 pack been observed.

A few of the recent snow surveys are tabulated hereunder, together with last year's measurements by way of comparison.

| WATERSHED AND SNOW COURSE | ELEV. | DATE | SNOW DEPTH Inches | WATER CONTENT Inches | WATER CONTENT AT SAME TIME LAST YEAR |
|---|---|---|---|---|---|
| SACRAMENTO | | | | | |
| Mt. Shasta | 8000 | 4-2-51 | 119.3 | 52.5 | 40.0 |
| Parks Creek | 6500 | 3-30-51 | 77.7 | 32.1 | 33.0 |
| PIT | | | | | |
| Cedar Pass | 7200 | 4-2-51 | 33.6 | 12.8 | 19.1 |
| FEATHER | | | | | |
| Mt. Lassen | 8400 | 3-29-51 | 191.5 | 93.9 | 81.1 |
| YUBA | | | | | |
| Donner Summit | 7020 | 3-26-51 | 57.3 | 26.3 | 48.5 |
| AMERICAN | | | | | |
| Echo Summit | 7500 | 4-2-51 | 62.1 | 26.8 | 46.7 |
| MOKELUMNE | | | | | |
| Tragedy Springs | 7900 | 3-31-51 | 72.7 | 30.4 | 50.5 |
| STANISLAUS | | | | | |
| Lake Alpine | 7500 | 3-31-51 | 56.4 | 24.3 | 52.3 |
| TUOLUMNE | | | | | |
| Paradise | 7600 | 3-28-51 | 48-9 | 21.9 | 47.1 |
| MERCED | | | | | |
| Snow Flat | 8700 | 3-26-51 | 74-4 | 31.8 | 42.0 |
| UPPER SAN JOAQUIN | | | | | |
| Kaiser Pass | 9200 | 3-29-51 | 56.6 | 23.8 | 38.7 |
| KINGS | | | | | |
| Sand Meadow | 8050 | 3-30-51 | 30.5 | 11.0 | 24.8 |
| KAWEAH | | | | | |
| Panther Meadow | 8650 | 3-31-51 | 44.9 | 17.5 | 33.2 |
| KERN | | | | | |
| Round Meadow | 9000 | 4-1-51 | 8.2 | 2.9 | 28.5 |

Lahontan Area

Snow on the east side of the Sierra was characterized by a similar marked variation in percentage of normal pack according to elevation.

Crest stations listed in the foregoing tabulation are also representative for stations in this area.

## SECTION 4

## SURFACE RESERVOIR STORAGE

### North Coastal Area

The two reservoirs in this area which have a combined capacity of 127,000 acre-feet now have in storage 99,000 acre-feet. This is slightly below the 10-year mean for these reservoirs.

### San Francisco Bay Area

Reservoirs in the San Francisco Bay Area now hold in storage approximately 125 per cent of normal April 1st amounts. This favorable storage condition has resulted from the abundant runoff following the November and December storms.

### Central Coastal Area

Reservoir storage in this area is below average and continuation of the present drought will prevent further appreciable increase.

### South Coastal Area

Only those reservoirs in this area that are supplied by water imports from outside the basin have any significant amounts of water in storage, the prolonged period of drought in this region has prevented any increase of water levels in other reservoirs.

### Central Valley Area

On April 1 total storage in 27 reservoirs serving the Sacramento and San Joaquin was 6,186,000 acre-feet which is 78 per cent of total capacity. Excluding the recently constructed reservoirs of Shasta, Millerton and three smaller ones, the amount of water in storage in 22 reservoirs is 75 per cent of capacity which is 126 per cent of normal for this date.

### Lahontan Area

The water surface elevation of Lake Tahoe on April 1st was 6227.95. Based on the snow surveys and assuming normal precipitation and temperature conditions for the balance of the season, the lake should rise about 0.75 feet to elevation 6228.7. This rise is 50% of normal. The maximum elevation should be reached about June 15th. If subnormal precipitation and temperatures should be experienced during the balance of the season, then Lake Tahoe may rise only to about 6228.4 which would be only 30% of the normal rise. Should normal conditions prevail, Lake Tahoe elevation during June will be the highest in five years.

In general, the other reservoirs in this area are also at favorable levels, but deficient summer flows, forecasted for all streams in this region, will not maintain these reservoirs at the favorable percentage of normal storage throughout the summer.

Colorado Desert Area

Lake Mead has now in storage 16,806,000 acre-feet which is 89% of the past 10 year mean. At this time last year, storage totaled 17,686,000. Summer power releases through Hoover Dam will sustain the flow of the lower river at a level in excess of all foreseeable needs.

## SECTION 5

## GROUND WATER

### North Coastal Area

The 1950-51 season served to raise the water levels generally in the free ground water area in the Lake County portion of the North Coastal Area except in the Upper Lake area. The following table shows the average difference of water levels from spring 1950 to spring 1951 for the various free ground water areas of this region:

| Area | Approximate Difference, in Feet |
|---|---|
| Big Valley free ground water area | + 2.5 |
| Scott Valley free ground water area | + 0.5 |
| Bachelor Valley free ground water area | + 3.0 |
| Upper Lake free ground water area | - 1.0 |

### San Francisco Bay Area

Water levels in the Pleasanton area in Livermore Valley in the spring of 1951 were about ten feet above levels of the spring of 1950. Water levels in the Eliot Basin also in Livermore Valley indicated a similar increase. In the area near the city of Livermore the rise has not been as pronounced but water levels in general were higher in the spring of 1951 than in the spring of 1950.

In all but minor localities in the Santa Clara Valley, water levels in the spring of 1951 were from 1 to 15 feet above levels noted in the spring of 1950. The greatest increase in water level elevation was generally in the pressure area near San Francisco Bay. Wells in the pressure area near the Pajaro River were flowing in the spring of 1951.

Water levels measured in deep wells in southern Alameda County were higher than in the spring of 1950. Depths to ground water measured in shallow wells on the San Leandro and San Lorenzo cones also in Alameda County were about the same as in the spring of 1950.

### Central Coastal Area

Ground water levels in the Salinas area in the spring of 1951 averaged about 8.5 feet above the ground water levels of the spring of 1950. This average includes both pressure and free ground water areas.

Ground water measurements on the floor of Pajaro Valley near the city of Monterey showed an average rise of about 1.5 feet from the levels measured in the spring of 1950.

### South Coastal Area

The seventh year of below normal rainfall in Southern California, com-

bined with an increased draft on ground water supplies due to the rapid population growth, has resulted in a continued accelerated lowering of ground water levels during 1950-51. Pumping areas adjacent to the foothills, which are replenished by mountain runoff, have experienced an annual drop in water level from six to eight feet, and in a number of such locations, the ground water levels have dropped lower than the record levels during the last drought which occurred in 1936. Along the coast the pressure levels have dropped from two to six feet this year. These pressure levels range from two to seventy-five feet below sea level and are causing or threatening to result in the intrusion of sea water into the fresh water ground water basins.

Los Angeles Region

During this last year in the San Fernando Valley water levels near Van Nuys have dropped over 9 feet, while at the lower end of the basin south of Burbank the drop has been 5 feet. The average drop since 1944 has been about 7 feet per year, and the elevations of the water surface are now approaching the historic low level of 1931.

In the upper San Gabriel Valley the water table at Baldwin Park has dropped 9.5 feet this last year. Records at this point exist since 1903 and water levels are now two feet above the lowest observed elevation in 1931 and are eight feet lower than the 1936 levels.

The Montebello forebay area on the San Gabriel River has experienced a lowering of 13 feet this last year, whereas the average rate of fall for the last seven years has been about 7 feet per year. The water table now is four to five feet lower than the observed levels in 1936. In the confined water stratum north of Signal Hill the pressure level has dropped about 1.5 feet this last year and is now about 25 feet below sea level.

In the West Coastal area the pressure level is now about 75 feet below sea level in the pumping trough and the annual drop in pressure level in the trough has averaged about 6 feet.

Santa Ana River Region

In the San Bernardino Valley the water level drop has varied from six to eight feet for this past year. In the upper part of the basin near Redlands the average annual drop for the past seven years has been about 6 feet. Water levels in the upper part of the basin are now about 7 feet below the lowest observed level in 1936.

The Ontario area has experienced a drop of water level of about 7 feet this year, whereas the average annual drop in the last seven years has been 2 feet. Water levels in the upper part of the Chino basin are now about 20 feet below the lowest elevation in 1936.

In the San Jacinto basin water levels continued to drop sharply in the vicinity of San Jacinto. The average difference in water level from the last year is about 12 feet near the junction of Bautista Creek and the San Jacinto River.

The average drop in water levels during the past 7 years has been about 4 feet per year. In the Perris Valley the water levels have been dropping at the average rate of 3 feet per year and the average drop during this last year has been about 6 feet.

The coastal plain area in Orange County has had a drop in water elevation of 8 feet this year, whereas the average drop in the last seven years has been 6 feet per year. Water levels are now about 12 feet below the lowest level in 1936. Near the coast there has been a pressure drop of about 2.5 feet this last year and water levels are about 13 feet below sea level.

San Luis Rey Area, San Diego County

The lower portion of the San Luis Rey River east of Oceanside has experienced a decline in water level of about one half foot this year and the pressure level is about two feet below sea level along the coast. In the upper part of the Mission Basin the water level has dropped from 3 to over 4 feet during the last year.

Tia Juana River Area, San Diego County

The water level in the Tia Juana basin is about 3 feet below sea level in the trough near the coast and the average drop during the past year in the basin has been over 1 foot. The average elevation is about 5 feet below the lowest elevation in 1936.

Central Valley Area

Ground water levels in the Calaveras investigation area in the spring of 1951 averaged about 2 feet above the levels of a year ago. This is in the area between Bellota on the Calaveras River and Stockton. Also in San Joaquin County the ground water levels in the Farmington-Collegeville area east of the Jack Tone Road averaged about 2 feet less than in the spring of 1950, but to the west of the Jack Tone Road they averaged about 2 feet above the levels of the spring of 1950.

In the Mokelumne River area in the vacinity of Lodi, ground water levels averaged about 3 feet above corresponding levels of a year ago.

On the Sacramento Valley floor investigations in the Placer County and in the Sutter-Yuba Counties areas, water levels this spring averaged about 0.5 foot and better than 2 feet, respectively, above those of a year ago.

Lahontan Area

Water levels in the Antelope Valley vary considerable according to location. However in the highly irrigated portion east of Lancaster, known as the Roosevelt District, water levels during this last year have dropped about 7 feet. The annual drop has been of about the same magnitude during the last seven years.

## SECTION 6

## STREAM FLOW

The April-July runoff from snow fed streams in the Sierra will be less than 65% of the 1950 summer flow. From all data received, summer flow on the Kaweah and Kern Rivers will be less than in 1924, the lowest summer flow year of record.

The snow pack on the upper Sacramento River gives promise of the best percentage of normal summer flow of all the Sierra streams with a deficiency of only twenty percent of normal expected. The greatest deficiencies of summer flow will occur on those streams that experienced their highest flood crests of record following the storms of November and December.

The plate following depicts pictorially the percentage of normal April-July flow anticipated on the Sierra streams. The tabulations following the plate set forth in tabular form the forecast for these same streams in terms of April-July and wateryear flow, and compare these forecast flows with proceeding summer and yearly flows. Forecasts of summer flow for the Truckee River at Farad, the Carson River at Fort Churchill, the West Walker near Coleville, the East Walker at Bridgeport Dam, and a forecast of the rise of Lake Tahoe are also included in this set of tabulations.

All of the forecasts contained herein are predicated upon the prevalence of normal weather conditions during the period of runoff. No significant rain has occurred in California since March 9 and as of the date of this report the drought continues. Without substantial rains during April and May summer flows will have to be revised downward.

The Los Angeles Department of Water and Power has forecast runoff for the hydrographic year in the Owens River watershed to amount to 58 per cent of their long term mean; the Mono Basin watershed, excluding Mill Creek to amount to 80 per cent of the long term mean; and the overall runoff from the Inyo-Mono area to average 63 per cent of normal.

The office of River Control, Bureau of Reclamation, Boulder City, Nevada has forecast the flow to Lake Mead for the April-July period to total 6.3 million acre-feet. Actual inflow during the corresponding period in 1950 was 7.5 million acre feet, with the 30 year normal, corrected to present conditions of upstream depletion, being 9.3 million acre-feet. The anticipated level of Lake Mead at the end of July 1951 is expected to reach 1,165 feet as compared to the maximum level in 1950 of 1,177.54.

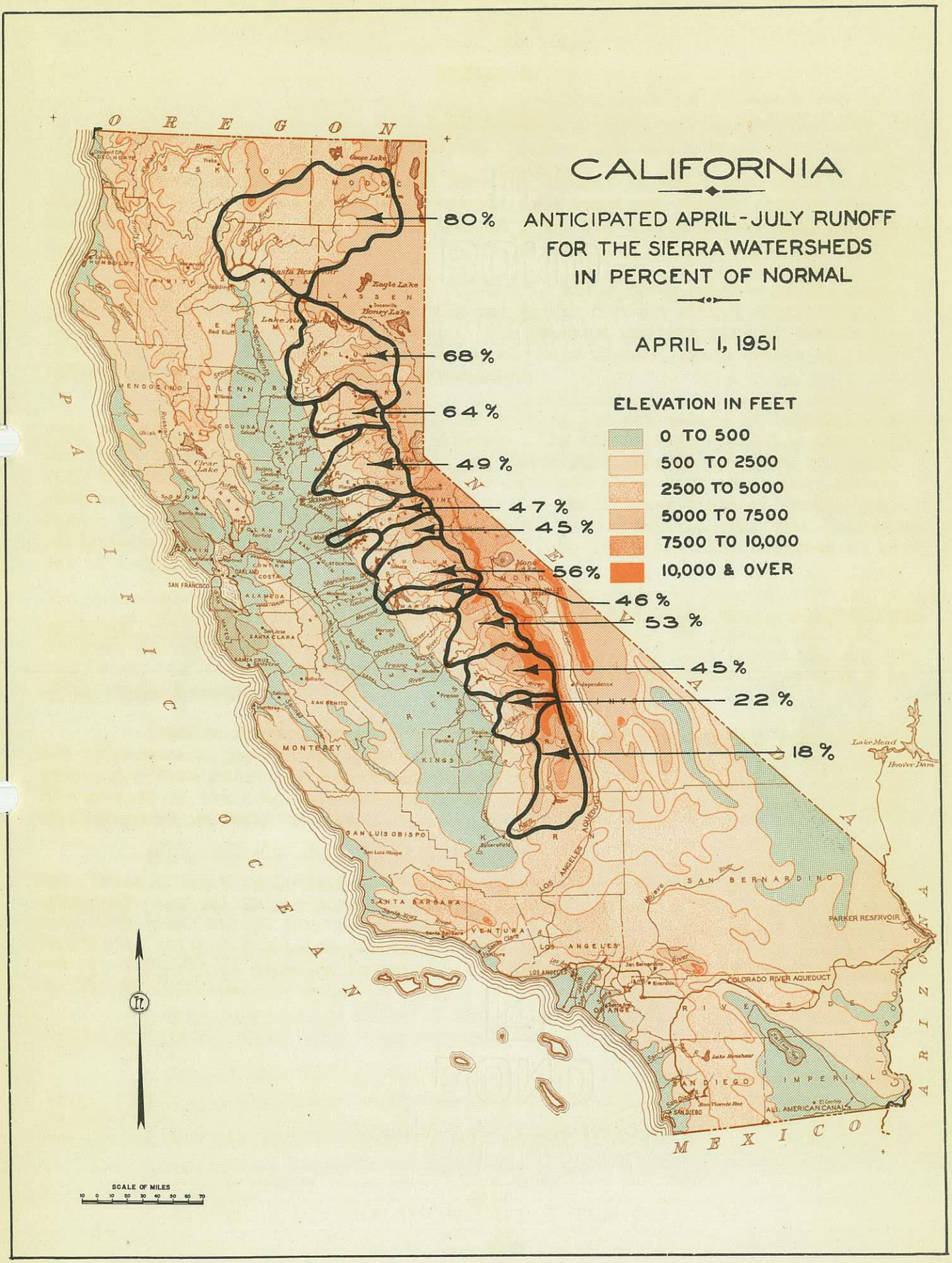
CALIFORNIA
ANTICIPATED APRIL-JULY RUNOFF
FOR THE SIERRA WATERSHEDS
IN PERCENT OF NORMAL
APRIL 1, 1951
ELEVATION IN FEET
0 TO 500
500 TO 2500
2500 TO 5000
5000 TO 7500
7500 TO 10,000
10,000 & OVER
80%
68%
64%
49%
47%
45%
56%
46%
53%
45%
22%
18%
OREGON
PACIFIC OCEAN
NEVADA
ARIZONA
MEXICO
Lake Mead
Hoover Dam
PARKER RESERVOIR
COLORADO RIVER AQUEDUCT
ALL AMERICAN CANAL
LOS ANGELES AQUEDUCT
SCALE OF MILES

TABLE 3

STREAM FLOW FORECASTS - APRIL 1, 1951

| Drainage Area or Stream Gaging Station | Stream Flow April 1 - July 31, Inc.[1] | | |
|---|---|---|---|
| | 61 year normal 1890-1950 Acre-Feet | 1951 Forecast in Per cent of Normal | Estimated 1951 flow April-July Acre-Feet |
| South Fork Pit River near Likely | 39,200 | 70% | 27,500 |
| Sacramento River at Shasta Dam 2 | 1,872,000 | 80% | 1,500,000 |
| Feather River near Oroville | 2,216,770 | 68% | 1,500,000 |
| Bowman Area-Middle Yuba & Canyon Creek | 100,370 | 82% | 82,000 |
| South Fk. of Yuba River at Langs Crossing | 243,530 | 72% | 175,000 |
| Yuba River at Smartsville | 1,208,900 | 64% | 775,000 |
| North Fork American River at Colfax | 308,950 | 45% | 140,000 |
| Middle Fork of American nr. E. Auburn | 679,050 | 46% | 310,000 |
| American River at Fair Oaks | 1,535,530 | 49% | 750,000 |
| N. Fk. Mokelumne River nr. West Point | 463,270 | 52% | 240,000 |
| Mokelumne River near Mokelumne Hill | 534,500 | 47% | 250,000 |
| M. Fk. Stanislaus at Sand Bar Flat near Avery | 383,900 | 49% | 190,000 |
| Stanislaus River below Melones Power House | 829,100 | 45% | 370,000 |
| Tuolumne River near Hetch Hetchy | 672,520 | 67% | 450,000 |
| Tuolumne River at La Grange | 1,344,650 | 56% | 750,000 |
| Merced River at Pohono Bridge | 413,480 | 51% | 210,000 |
| Merced River at Exchequer | 705,110 | 46% | 325,000 |
| Big Creek at Huntington Lake | 107,370 | 50% | 54,000 |
| S. Fk. San Joaquin R. at Florence Lake | 212,880 | 66% | 140,000 |
| San Joaquin R. above mouth of Big Creek | 1,161,960 | 55% | 640,000 |
| San Joaquin River at Friant | 1,363,120 | 53% | 725,000 |
| N. Fk. Kings R. below Rancheria Creek | 318,500 | 47% | 150,000 |
| Kings River at Piedra | 1,335,920 | 45% | 600,000 |
| Kaweah River near Three Rivers 2 | 295,650 | 22% | 65,000 |
| Kern River near Bakersfield 2 | 457,130 | 18% | 80,000 |
| Truckee River at Farad 3 | 290,000 | 52% | 150,000 |
| *Lake Tahoe 3 | Lake Rise 1.55 ft. | 48% | 0.75 ft. to Elev. 6228.7* |
| Carson River at Fort Churchill 4 | 195,000 | 26% | 50,000 |
| West Walker nr. Coleville 4 | 175,000 | 57% | 100,000 |
| East Walker at Bridgeport Dam 4-5 | 75,000 | 43% | 32,000 |

1 Unimpaired flow. That is the flow as measured in the stream with corrections applied for upstream regulation and diversions.

2 Net flow at station after upstream irrigation use.

3 Forecasts by Truckee Basin Water Committee. (45 Year Normal)

4 Forecasts by Nevada Cooperative Snow Surveys Committee. (45 Year Normal)

5 The forecast period for the East Walker is April - August instead of April - July, on account of the late melting snow in the Saw Tooth Range west of Bridgeport.

* Elevation of Lake Tahoe water surface on March 31 was 6227.94.



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TABLE 4

A recapitulation of the runoff expected from the snowpack this year, as compared with the corresponding flows during the past five years. (Quantity of flow is expressed in Thousands of Acre-Feet.)

| Watershed and Station | Unimpaired Flow during period April 1st - July 31 (In thousands of Acre-feet) | | | | | | |
|---|---|---|---|---|---|---|---|
| | Normal* | Actual Flow | | | | | Forecast Flow for 1951 |
| | | 1946 | 1947 | 1948 | 1949 | 1950 | |
| Sacramento at Shasta Dam | 1,872 | 1,597 | 1,318 | 2,697 | 1,506 | 1,456 | 1,500 |
| Feather at Oroville | 2,217 | 1,574 | 904 | 2,497 | 1,416 | 1,988 | 1,500 |
| Yuba at Smartsville | 1,209 | 1,049 | 559 | 1,406 | 961 | 1,161 | 775 |
| American at Fair Oaks | 1,536 | 1,314 | 679 | 1,699 | 1,243 | 1,593 | 750 |
| Mokelumne at Mokelumne Hill | 535 | 450 | 251 | 520 | 434 | 571 | 250 |
| Stanislaus at Melones Dam | 829 | 715 | 411 | 764 | 606 | 832 | 370 |
| Tuolumne at La Grange | 1,345 | 1,156 | 680 | 1,183 | 1,026 | 1,180 | 750 |
| Merced at Exchequer | 705 | 602 | 338 | 598 | 509 | 552 | 325 |
| San Joaquin at Friant | 1,363 | 1,171 | 697 | 1,036 | 976 | 1,010 | 725 |
| Kings at ** Piedra | 1,336 | 1,128 | 726 | 869 | 821 | 1,028 | 600 |
| Kaweah at ** Three Rivers | 296 | 224 | 143 | 226 | 181 | 222 | 65 |
| Kern at ** Bakersfield | 457 | 391 | 250 | 240 | 210 | 300 | 80 |

*Normal based on 61 year period 1890 - 1950, incl.

**Net flow at station after upstream irrigation use.

TABLE 5

1950-51 SEASONAL STREAM FLOW
(Total To Date & Forecasted)

| Watershed and Station | NATURAL FLOW (Acre-Feet) | | | |
|---|---|---|---|---|
| | Computed* | April 1 Forecast | | Total |
| | Oct. 1 - Mar. 31 | Apr. 1-Jul. 31 | Aug.1-Sep.30 | Oct. 1-Sep. 30 |
| Sacramento at Red Bluff | 6,646,300 | 1,950,000 | 453,700 | 9,050,000 |
| Feather at Oroville | 3,982,900 | 1,500,000 | 167,100 | 5,650,000 |
| Yuba at Smartsville | 2,478,130 | 775,000 | 36,870 | 3,290,000 |
| American at Fair Oaks | 3,451,420 | 750,000 | 18,580 | 4,220,000 |
| Mokelumne at Mokelumne Hill | 780,000 | 250,000 | 0 | 1,030,000 |
| Stanislaus at Melones Dam | 1,151,170 | 370,000 | 8,830 | 1,530,000 |
| Tuolumne at La Grange | 1,507,550 | 750,000 | 2,450 | 2,260,000 |
| Merced at Exchequer | 781,250 | 325,000 | 3,750 | 1,110,000 |
| San Joaquin at Friant | 898,400 | 725,000 | 26,600 | 1,650,000 |
| Kings at (1) Piedra | 704,300 | 600,000 | 20,700 | 1,325,000 |
| Kaweah at (1) Three Rivers | 297,480 | 65,000 | 2,520 | 365,000 |
| Kern at (1) Bakersfield | 283,010 | 80,000 | 6,990 | 370,000 |

* Based on Unpublished Records, Subject to Revision.
(1) Net Flow at Station After Upstream Irrigation Use.

TABLE 6
1
SEASONAL STREAM FLOW IN PER CENT OF NORMAL
For the Water Year
Beginning October 1st and Ending September 30th

| River | Station | 60-Year Mean (1889-1949) Acre Feet | Seasonal Stream Flow in Per cent of 60 Year Mean (1889-1949) | | | | | Estimated seasonal runoff from Oct. 1, 1950 to Sept. 30, 1951 |
|---|---|---|---|---|---|---|---|---|
| | | | Actual | | | | Estimated | |
| | | | 1946-47 | 1947-48 | 1948-49 | 1949-50 | 1950-51 | |
| Sacramento | Red Bluff | 8,667,000 | 58% | 88% | 70% | 66% | 104% | 9,050,000 |
| Feather | Oroville | 4,778,000 | 53% | 81% | 54% | 80% | 118% | 5,650,000 |
| Yuba | Smartsville | 2,464,000 | 55% | 82% | 60% | 85% | 133% | 3,290,000 |
| American | Fair Oaks | 2,844,000 | 50% | 79% | 65% | 94% | 148% | 4,220,000 |
| Sacramento | Sacramento | * | 55% | 83% | 63% | 76% | 118% | * ——— |
| Mokelumne | Mokelumne Hill | 789,000 | 50% | 80% | 66% | 95% | 131% | 1,030,000 |
| Stanislaus | Melones | 1,248,000 | 52% | 72% | 60% | 86% | 122% | 1,530,000 |
| Tuolumne | La Grange | 1,963,000 | 56% | 72% | 64% | 79% | 115% | 2,260,000 |
| Merced | Exchequer | 1,053,000 | 53% | 65% | 60% | 68% | 105% | 1,110,000 |
| San Joaquin | Friant | 1,885,000 | 59% | 64% | 62% | 70% | 88% | 1,650,000 |
| San Joaquin | Vernalis | * | 56% | 69% | 62% | 76% | 106% | * ——— |
| Combined Sacramento and San Joaquin Rivers | | * | 55% | 80% | 63% | 77% | 116% | * ——— |
| Kings | Piedra [2] | 1,785,000 | 62% | 53% | 54% | 72% | 74% | 1,325,000 |
| Kaweah | Three Rivers [2] | 432,000 | 61% | 60% | 51% | 70% | 84% | 365,000 |
| Kern | Bakersfield [2] | 716,000 | 63% | 47% | 42% | 63% | 52% | 370,000 |

1 Unimpaired flow. That is the flow as measured in the stream with corrections applied for upstream regulation and diversions.

* The actual 60-year mean in acre feet not computed. The annual percentage is obtained by comparing the total of the major tributary streams, as listed, with the total of the 60-year means for the same streams.

2 For the Kings, Kaweah, and Kern Rivers there are some unmeasured diversions for irrigation above the measuring station. For these three rivers the figures in the above table are based upon the impaired flow as measured at the station.

# BASIC DATA

TABLE 7
PRECIPITATION DATA
AS OF APRIL 1, 1951

| 1 BASIN AND PRECIPITATION STATION | ELEVATION IN FEET | PRECIPITATION DURING MARCH 1951 | | | PRECIPITATION FROM JULY 1, 1950 TO APRIL 1, 1951 | | | 2 Normal Seasonal Precipitation (July to June) Inches |
|---|---|---|---|---|---|---|---|---|
| | | Total (Inches) | 2 Normal (Inches) | In per cent of Normal | Total (Inches) | 2 Normal (Inches) | In per cent of Normal | |
| UPPER SACRAMENTO-PIT AND McCLOUD RIVERS | | | | | | | | |
| Jess Valley | 5400 | 0.93 | 1.63 | 57% | 12.67 | 11.67 | 109% | 15.72 |
| Alturas | 4460 | 1.07 | 1.23 | 87% | 8.69 | 9.13 | 95% | 12.08 |
| Bieber | 4200 | 0.43 | 1.86 | 23% | - | 13.14 | - | 16.08 |
| Mt. Shasta | 3555 | 1.00 | 4.52 | 22% | 31.94 | 29.22 | 109% | 34.67 |
| Hat Creek | 3824 | 0.49 | 1.99 | 25% | 15.30 | 14.61 | 105% | 17.91 |
| Fall River Mills | 3340 | 0.40 | 2.44 | 16% | 13.80 | 15.56 | 89% | 18.85 |
| McCloud | 3270 | 2.70 | 5.85 | 46% | 51.71 | 41.93 | 123% | 49.28 |
| Grass Valley | 2690 | 5.40 | - | - | 73.95 | - | - | - |
| FEATHER RIVER | | | | | | | | |
| Bucks Storage Dam | 5100 | 4.54 | 10.51 | 43% | 78.97 | 60.56 | 130% | 69.95 |
| Westwood | 5000 | Data Not Received | | - | - | - | - | - |
| Sierraville | 5000 | 0.77 | 3.34 | 23% | 31.00 | 21.94 | 141% | 25.35 |
| Vinton | 5000 | 0.13 | - | - | 15.24 | - | - | - |
| Mineral | 4935 | 2.49 | 7.15 | 35% | 51.96 | 44.14 | 118% | 51.62 |
| Portola | 4832 | 0.58 | 2.52 | 23% | 23.22 | 15.40 | 151% | 18.05 |
| Prattville | 4600 | 1.57 | 5.25 | 30% | 40.08 | 31.96 | 125% | 36.98 |
| Canyon Dam | 4570 | 1.86 | 5.35 | 35% | 39.82 | 32.45 | 123% | 37.94 |
| Chester | 4550 | 1.16 | 4.35 | 27% | 30.66 | 26.89 | 114% | 31.55 |
| Doyle | 4300 | 0.25 | 1.20 | 21% | 10.94 | 8.91 | 123% | 10.56 |
| Veramont | 3500 | 0.85 | 4.55 | 19% | 39.35 | 29.35 | 134% | 33.77 |
| Quincy | 3409 | 2.11 | 5.67 | 37% | 45.80 | 34.21 | 134% | 40.04 |
| West Branch | 3216 | 4.29 | 9.37 | 46% | 67.58 | 62.05 | 109% | 71.78 |
| Caribou | 3000 | 1.99 | 5.95 | 33% | 42.41 | 35.19 | 121% | 40.86 |
| Lake Wilenor | 2000 | 3.38 | 7.65 | 44% | 63.89 | 46.18 | 138% | 54.05 |
| Storrie | 1760 | 3.12 | 9.61 | 32% | 70.11 | 56.09 | 125% | 64.55 |
| Las Plumas | 506 | 3.20 | 6.55 | 49% | 55.94 | 43.31 | 129% | 49.36 |

1 Certain of the stations are not actually in the basin shown, but are closely adjacent. Stations common to ..... more than one basin are listed under each basin.
2 These are computed 61 year normals for the period 1890-1950, inclusive. Where the periods of record are less then 61 years, the normals have been computed by comparison with the records of stations for which the actual 61 year data are complete. This gives all normals based upon the same period of years and comparable.
3 R.N.C. Record not complete.

TABLE 7 - PRECIPITATION DATA - TO APRIL 1, 1951 (Cont'd.)

| 1 BASIN AND PRECIPITATION STATION | ELEVATION IN FEET | PRECIPITATION DURING MARCH 1951 | | | PRECIPITATION FROM JULY 1, 1950 TO APRIL 1, 1951 | | | 2 Normal Seasonal Precipitation (July to June) Inches |
|---|---|---|---|---|---|---|---|---|
| | | Total (Inches) | 2 Normal (Inches) | In per cent of Normal | Total (Inches) | 2 Normal (Inches) | In per cent of Normal | |
| YUBA RIVER | | | | | | | | |
| Soda Springs | 6870 | 4.57 | 7.73 | 59% | 70.51 | 41.08 | 172% | 47.39 |
| Bowman Dam | 5347 | 4.04 | 11.50 | 35% | 76.93 | 59.23 | 130% | 69.40 |
| Lake Spaulding | 4600 | 7.32 | 10.81 | 68% | 80.19 | 56.80 | 141% | 67.03 |
| Deer Creek | 3700 | 7.94 | 10.23 | 78% | 90.67 | 58.89 | 154% | 68.38 |
| Nevada City | 2570 | 5.48 | 7.81 | 70% | 65.60 | 43.48 | 151% | 50.33 |
| Dobbins (Near) | 1650 | 3.01 | 6.07 | 50% | 57.18 | 35.80 | 160% | 41.53 |
| TRUCKEE & TAHOE BASINS | | | | | | | | |
| Twin Lakes | 7970 | 2.42 | 7.63 | 32% | 48.22 | 38.94 | 124% | 45.58 |
| Soda Springs | 6870 | 4.57 | 7.73 | 59% | 70.51 | 41.08 | 172% | 47.39 |
| Tahoe | 6230 | 1.33 | 4.58 | 29% | 41.18 | 28.03 | 147% | 32.18 |
| Truckee | 6200 | 1.86 | 4.32 | 43% | 37.62 | 23.45 | 160% | 26.55 |
| AMERICAN RIVER | | | | | | | | |
| Twin Lakes | 7970 | 2.42 | 7.63 | 32% | 48.22 | 38.94 | 124% | 45.58 |
| Soda Springs | 6870 | 4.57 | 7.73 | 59% | 70.51 | 41.08 | 172% | 47.39 |
| Blue Canyon | 5272 | 6.82 | - | - | 86.08 | - | - | - |
| Colfax | 2420 | 4.85 | 7.56 | 64% | 60.35 | 40.96 | 147% | 47.46 |
| Placerville | 1924 | 4.33 | 6.78 | 64% | 50.17 | 35.02 | 143% | 40.41 |
| CARSON RIVER | | | | | | | | |
| Twin Lakes | 7970 | 2.42 | 7.63 | 32% | 48.22 | 38.94 | 124% | 45.58 |
| MOKELUMNE RIVER | | | | | | | | |
| Twin Lakes | 7970 | 2.42 | 7.63 | 32% | 48.22 | 38.94 | 124% | 45.58 |
| Salt Springs Res. | 3660 | 4.39 | 6.97 | 63% | 52.62 | 37.22 | 141% | 44.32 |
| Tiger Creek | 2400 | 4.63 | 7.52 | 62% | 62.05 | 39.13 | 159% | 45.64 |
| West Point | 2326 | 4.22 | 6.83 | 62% | 48.58 | 34.06 | 143% | 39.74 |
| Electra | 699 | 3.36 | 5.50 | 61% | 41.07 | 27.18 | 151% | 31.28 |
| STANISLAUS RIVER | | | | | | | | |
| Strawberry Lake | 5620 | 3.22 | 6.07 | 53% | 46.90 | 32.72 | 143% | 39.15 |
| Calaveras Big Trees | 4700 | 5.96 | 9.24 | 65% | 61.53 | 45.14 | 136% | 53.09 |
| WALKER RIVER | | | | | | | | |
| Bridgeport | 6473 | 0.13 | .99 | 13% | 10.10 | 9.06 | 111% | 10.63 |

1, 2, 3 See footnotes first page of this table.

TABLE 7 - PRECIPITATION DATA - TO APRIL 1, 1951 (Cont'd.)

| 1 BASIN AND PRECIPITATION STATION | ELEVATION IN FEET | PRECIPITATION DURING MARCH 1951 | | | PRECIPITATION FROM JULY 1, 1950 TO APRIL 1, 1951 | | | 2 Normal Seasonal Precipitation (July to June) Inches |
|---|---|---|---|---|---|---|---|---|
| | | Total (Inches) | 2 Normal (Inches) | In per cent of Normal | Total (Inches) | 2 Normal (Inches) | In per cent of Normal | |
| TUOLUMNE RIVER | | | | | | | | |
| Strawberry Lake | 5620 | 3.01 | 6.07 | 50% | 46.69 | 32.72 | 143% | 39.15 |
| Lake Eleanor | 4650 | 3.74 | 7.06 | 53% | 53.11 | 37.57 | 141% | 44.20 |
| Hetch Hetchy | 3530 | 3.00 | 5.89 | 51% | 43.41 | 29.40 | 148% | 35.37 |
| Groveland | 2828 | 3.23 | 6.60 | 49% | 35.10 | 33.03 | 106% | 37.73 |
| Sonora | 1825 | 3.29 | 5.83 | 56% | 33.87 | 28.58 | 119% | 32.90 |
| MERCED RIVER | | | | | | | | |
| Yosemite N. P. | 3960 | 2.57 | 5.49 | 47% | 41.46 | 30.86 | 134% | 36.23 |
| Dudley's | 3000 | 2.79 | - | - | 46.13 | - | - | - |
| Mariposa | 1932 | 1.95 | 5.42 | 36% | 34.85 | 26.91 | 130% | 30.30 |
| MONO BASIN | | | | | | | | |
| Ellery Lake | 9600 | 0.10 | 4.41 | 02% | 20.17 | 25.47 | 79% | 31.07 |
| Gem Lake | 9120 | 0.28 | 3.65 | 08% | 16.45 | 22.52 | 73% | 26.55 |
| UPPER SAN JOAQUIN | | | | | | | | |
| Huntington Lake | 7000 | 1.73 | 4.98 | 35% | 35.83 | 26.92 | 133% | 32.13 |
| Big Creek P. H. #1 | 4900 | 1.62 | 5.25 | 31% | 27.35 | 27.18 | 101% | 32.65 |
| Crane Valley | 3500 | 2.15 | 6.77 | 32% | 36.27 | 36.34 | 100% | 41.86 |
| North Fork R. S. | 3000 | 1.47 | 5.84 | 25% | 36.15 | 30.12 | 120% | 34.60 |
| Auberry | 2050 | 1.10 | 4.90 | 22% | 25.49 | 23.06 | 111% | 26.34 |
| OWENS BASIN | | | | | | | | |
| South Lake | 9620 | 0.20 | 2.18 | 09% | 23.19 | 15.11 | 153% | 17.55 |
| Lake Sabrina | 9100 | 0.13 | 2.10 | 06% | 13.71 | 15.38 | 89% | 17.67 |
| Intake #2 Bishops Creek | 8000 | 0.19 | 1.88 | 10% | 10.84 | 10.54 | 103% | 12.42 |
| Crooked Creek | 6700 | 0.04 | 1.31 | 03% | 8.86 | 8.54 | 104% | 9.81 |
| Big Pines Power House #3 | 5400 | T | 1.01 | 0% | 6.13 | 7.43 | 83% | 8.08 |
| Independence | 3957 | 0.01 | 0.44 | 02% | 7.26 | 4.14 | 175% | 4.59 |
| L. A. Aqueduct at Intake | 3880 | 0.0 | 0.47 | 0% | 5.01 | 4.00 | 125% | 4.37 |
| Cottonwood Gates | 3600 | 0.01 | .58 | 17% | 4.73 | 4.73 | 100% | 5.19 |
| KINGS RIVER | | | | | | | | |
| Grant Grove | 6775 | 1.65 | 6.63 | 25% | 38.26 | 34.68 | 110% | 42.03 |
| Balch Camp | 1300 | 1.44 | 4.59 | 31% | 29.70 | 24.06 | 123% | 28.78 |
| Piedra | 500 | 0.71 | 3.23 | 22% | 14.24 | 15.97 | 89% | 18.21 |

1, 2, 3 See footnotes first page of this table.

TABLE 7 - PRECIPITATION DATA - TO APRIL 1, 1951 (Cont'd.)

| 1 BASIN AND PRECIPITATION STATION | ELEVATION IN FEET | PRECIPITATION DURING MARCH 1951 | | | PRECIPITATION FROM JULY 1, 1950 TO APRIL 1, 1951 | | | 2 Normal Seasonal Precipitation (July to June) Inches |
|---|---|---|---|---|---|---|---|---|
| | | Total (Inches) | 2 Normal (Inches) | In per cent of Normal | Total (Inches) | 2 Normal (Inches) | In per cent of Normal | |
| KAWEAH RIVER | | | | | | | | |
| Grant Grove | 6775 | 1.65 | 6.63 | 25% | 38.26 | 34.68 | 110% | 42.03 |
| Giant Forest | 6360 | 2.61 | 7.52 | 35% | 48.02 | 36.73 | 131% | 43.92 |
| Ash Mountain | 1600 | 0.62 | 4.97 | 12% | 24.40 | 21.69 | 112% | 26.20 |
| Three Rivers | 870 | 0.86 | 3.55 | 24% | 19.23 | 17.28 | 111% | 20.52 |
| KERN RIVER | | | | | | | | |
| Springville (Near) | 4050 | 2.59 | 6.42 | 40% | 42.05 | 30.52 | 138% | 36.24 |
| Kern River #3 Intake | 3640 | 0.33 | 2.71 | 12% | 9.35 | 15.43 | 61% | 17.18 |
| Glennville | 3300 | Data Not Received | | - | - | 17.27 | - | 20.74 |
| Kernville | 2600 | 0.26 | 1.61 | 16% | 6.94 | 9.31 | 75% | 10.25 |
| LOS ANGELES RIVER | | | | | | | | |
| Opids Camp | 4480 | 1.14 | 7.42 | 15% | 12.64 | 36.34 | 35% | 40.41 |
| Loomis Ranch | 4050 | 0.55 | 4.69 | 12% | 6.39 | 18.47 | 35% | 20.62 |
| Haines Canyon (Upper) | 3450 | 0.90 | 5.45 | 17% | 8.97 | 25.07 | 36% | 29.51 |
| Clear Creek | 3300 | Data Not Received | | - | - | 28.74 | - | 31.46 |
| Sleepy Hollow Ranch | 2950 | 0.48 | 5.87 | 08% | 7.49 | 28.17 | 27% | 31.52 |
| Haines Canyon (Lower) | 2250 | 0.75 | 4.09 | 18% | 9.01 | 22.61 | 40% | 25.87 |
| Big Tujunga Dam #1 | 2050 | Data Not Received | | - | - | 26.68 | - | 29.88 |
| Arroyo Seco Ranger Sta. | 1530 | Data Not Received | | - | - | 23.52 | - | 26.17 |
| SAN GABRIEL RIVER | | | | | | | | |
| Table Mountain Observ. | 7500 | 0.74 | 2.15 | 34% | 4.08 | 12.86 | 32% | 14.29 |
| Big Pines Camp | 6860 | 1.29 | 4.87 | 26% | 7.33 | 24.07 | 30% | 26.80 |
| Mt. Wilson | 5850 | 1.07 | 5.88 | 18% | - | 29.60 | - | 33.13 |
| Crystal Lake (East) | 5740 | 1.70 | 7.46 | 23% | 11.29 | 36.69 | 31% | 40.08 |
| Falling Springs | 4650 | Data Not Received | | - | - | 30.25 | - | 33.49 |
| Opids Camp | 4480 | 1.14 | 7.42 | 15% | 12.64 | 36.34 | 35% | 40.41 |
| Camp Baldy | 4300 | 1.26 | 6.16 | 20% | 8.55 | 29.71 | 29% | 33.81 |
| Santa Ana River P.H. #1 | 2850 | 0.99 | 4.88 | 20% | 7.93 | 23.13 | 34% | 26.90 |
| Tanbark Flats | 2700 | Data Not Received | | - | - | 27.14 | - | 30.28 |
| Henninger Flats | 2650 | Data Not Received | | - | - | 25.69 | - | 28.97 |
| Mouth San Antonio Canyon | 2500 | 0.80 | 4.80 | 17% | 7.69 | 24.07 | 32% | 27.11 |
| San Dimas Guard Station | 2400 | Data Not Received | | - | - | 22.67 | - | 24.85 |
| Sawpit Canyon | 2000 | Data Not Received | | - | - | 27.59 | - | 31.21 |
| Santa Anita Fern Lodge | 1950 | 0.90 | 5.79 | 16% | 11.69 | 30.84 | 38% | 34.05 |

1, 2, 3 See footnotes first page of this table.

TABLE 7 - PRECIPITATION DATA - TO APRIL 1, 1951 (Cont'd.)

| 1 BASIN AND PRECIPITATION STATION | ELEVATION IN FEET | PRECIPITATION DURING MARCH 1951 | | | PRECIPITATION FROM JULY 1, 1950 TO APRIL 1, 1951 | | | 2 Normal Seasonal Precipitation (July to June) Inches |
|---|---|---|---|---|---|---|---|---|
| | | Total (Inches) | 2 Normal (Inches) | In per cent of Normal | Total (Inches) | 2 Normal (Inches) | In per cent of Normal | |
| SAN GABRIEL RIVER Cont'd. | | | | | | | | |
| San Gabriel Dam #1 Camp | 1600 | 1.07 | 6.06 | 18% | 7.63 | 28.31 | 27% | 30.57 |
| Big Santa Anita Dam | 1400 | 0.76 | 4.48 | 17% | 10.82 | 23.01 | 47% | 25.81 |
| San Dimas Dam | 1350 | 0.74 | 4.42 | 17% | 8.56 | 21.80 | 39% | 23.77 |
| Rogers Canyon | 800 | Data Not Received | | - | - | 21.25 | - | 23.52 |
| SANTA ANA RIVER | | | | | | | | |
| Table Mountain Obs. | 7500 | 0.74 | 2.15 | 34% | 4.08 | 12.86 | 32% | 14.29 |
| Big Pines Camp | 6860 | 1.29 | 4.87 | 26% | 7.33 | 24.07 | 30% | 26.80 |
| Big Bear Lake Dam | 6800 | 2.64 | 6.62 | 40% | 15.86 | 32.72 | 47% | 36.55 |
| Squirrel Inn | 5700 | 1.99 | 7.92 | 25% | 14.41 | 37.08 | 39% | 42.42 |
| Lake Arrowhead | 5175 | 2.12 | R.N.C. | - | 14.81 | - | - | - |
| Seven Oaks | 5000 | Data Not Received | | - | - | 24.45 | - | 27.58 |
| Camp Baldy | 4300 | 1.26 | 6.16 | 20% | 8.55 | 29.71 | 29% | 33.81 |
| Beaumont Pumping Plant (Near) | 3045 | 0.85 | 3.96 | 21% | 9.30 | 19.15 | 49% | 22.48 |
| Mill Creek #2 | 2950 | 0.99 | 3.90 | 25% | 7.56 | 19.32 | 39% | 22.89 |
| Santa Ana River P.H. #1 | 2850 | 0.99 | 4.88 | 20% | 7.93 | 23.13 | 34% | 26.90 |
| Beaumont (W.B.) | 2589 | 0.59 | 3.55 | 17% | 5.43 | 16.45 | 33% | 18.97 |
| Mouth San Antonio Canyon | 2500 | 0.80 | 4.80 | 17% | 7.69 | 24.07 | 32% | 27.11 |
| Lytle Creek P. H. | 2250 | 1.25 | 5.87 | 21% | 14.03 | 30.66 | 46% | 34.75 |
| SAN DIEGO COUNTY PACIFIC SLOPE BASINS | | | | | | | | |
| Mt. Palomar Obs. | 5600 | 3.14 | - | - | 14.55 | - | - | - |
| Cuyamaca | 4680 | 2.70 | 6.91 | 39% | 20.57 | 33.88 | 61% | 39.03 |
| Julian (Wynola) | 4220 | 1.95 | - | - | 21.93 | - | - | - |
| Warner Springs | 3170 | 0.93 | 2.71 | 34% | 7.01 | 15.73 | 45% | 17.58 |
| Campo | 3000 | 1.12 | 2.85 | 39% | 7.58 | 16.59 | 46% | 18.76 |
| Barrett Dam | 1750 | 1.12 | 3.32 | 34% | 7.84 | 16.47 | 48% | 18.76 |
| Escondido | 750 | 0.61 | 2.78 | 22% | 6.81 | 14.44 | 47% | 16.31 |
| El Capitan Dam | 610 | 0.98 | 3.20 | 31% | 7.48 | 15.00 | 50% | 17.97 |
| El Cajon | 560 | 0.53 | 2.33 | 23% | 5.41 | 12.38 | 44% | 14.02 |

1, 2, 3 See footnotes first page of this table.

TABLE 8.
SNOW SURVEY DATA FOR ALL COURSES
AS OF APRIL 1, 1951

| 1 DRAINAGE BASINS and SNOW COURSES | ELEVATION in FEET | DATE of SURVEY | DEPTH of SNOW Inches | DENSITY Per cent | WATER CONTENT Inches | 2 Normal Water content Inches | Per cent normal water content | Corresponding Water Content 1950 Inches |
|---|---|---|---|---|---|---|---|---|
| SCOTT RIVER | | | | | | | | |
| Etna Mountain | 6700 | 3-28-51 | 69.7 | 45.3% | 31.6 | New Course | This Year | - |
| Middle Boulder #1 | 6700 | 3-30-51 | 51.9 | 46.8% | 24.3 | 37.4 | 65% | 24.5 |
| Middle Boulder #3 | 6400 | 3-30-51 | 38.6 | 46.6% | 18.0 | New Course | 1949 | 21.3 |
| Wolford Cabin | 6400 | 3-27-51 | 78.8 | 42.3% | 33.3 | New Course | 1948 | 32.6 |
| Swampy John | 6300 | 3-28-51 | 78.8 | 43.7% | 34.4 | New Course | This Year | - |
| Marble Valley | 5900 | 3-29-51 | 94.7 | 44.2% | 41.8 | New Course | This Year | - |
| Log Lake | 5500 | 4- 2-51 | 49.6 | 49.0% | 24.3 | New Course | This Year | - |
| SHASTA RIVER | | | | | | | | |
| Parks Creek | 6500 | 3-30-51 | 77.7 | 41.3% | 32.1 | 33.4 | 96% | 33.0 |
| Little Shasta | 6200 | 3-31-51 | 52.8 | 43.1% | 22.8 | 26.3 | 87% | 26.0 |
| Sweetwater | 5500 | 3-30-51 | 27.1 | 36.7% | 10.0 | 24.4 | 41% | 14.8 |
| UPPER SACRAMENTO RIVER | | | | | | | | |
| Mount Shasta | 8000 | 4- 2-51 | 119.3 | 44.0% | 52.5 | 56.1 | 94% | 40.0 |
| Deadfall Lakes | 7300 | 3-31-51 | 64.4 | 44.4% | 28.6 | 37.5 | 76% | 27.2 |
| Sand Flats | 7000 | 4- 2-51 | 88.0 | 44.3% | 39.0 | 47.6 | 82% | 36.7 |
| North Fork Sacto. | 6800 | 3-31-51 | 35.8 | 39.3% | 14.1 | 23.5 | 60% | 17.6 |
| Parks Creek | 6500 | 3-30-51 | 77.7 | 41.3% | 32.1 | 33.4 | 96% | 33.0 |
| Gray Rock Lakes | 6300 | 4- 3-51 | 71.3 | 44.7% | 31.9 | 46.4 | 69% | 37.4 |
| Whalan Station | 5900 | 4- 6-51 | 19.6 | 41.3% | 8.2 | 19.4 | 42% | 18.1 |
| Mumbo Basin | 5700 | 4- 4-51 | 33.7 | 44.8% | 15.1 | 24.4 | 62% | 26.5 |
| Highland Lakes | 5700 | Report Not Received | | - | - | 34.9 | - | 25.8 |
| Slate Creek | 5600 | Report Not Received | | - | - | 32.5 | - | 22.4 |
| McCLOUD RIVER | | | | | | | | |
| Mount Shasta | 8000 | 4- 2-51 | 119.3 | 44.0% | 52.5 | 56.1 | 93% | 40.0 |
| Brewer Creek | 6000 | 3-31-51 | 57.4 | 47.7% | 27.4 | 38.5 | 71% | 25.2 |
| Buck Mountain | 5560 | 4- 1-51 | 62.2 | 43.8% | 27.2 | 25.9 | 105% | 23.7 |
| Stouts Meadow | 5300 | 3-30-51 | 67.5 | 47.3% | 31.9 | 49.1 | 65% | 39.0 |
| Ash Creek | 5000 | 3-31-51 | 27.0 | 43.8% | 11.8 | 22.9 | 51% | 17.2 |
| Dead Horse Canyon | 4500 | 4- 2-51 | 26.3 | 45.1% | 11.8 | 11.8 | 100% | 13.7 |

1 Data for courses common to more than one basin are listed under each basin.
2 These are computed 61-year normals for the period 1890-1950, inclusive.
N.S.M. - No Survey Made.

TABLE 8 - SNOW SURVEY DATA FOR ALL COURSES - APRIL, 1951 - (Cont'd.)

| 1 DRAINAGE BASINS and SNOW COURSES | ELEVATION in FEET | DATE of SURVEY | DEPTH of SNOW Inches | DENSITY Per cent | WATER CONTENT Inches | 2 Normal Water content Inches | Per cent Normal water content | Corresponding Water Content 1950 Inches |
|---|---|---|---|---|---|---|---|---|
| PIT RIVER | | | | | | | | |
| Mount Lassen | 8400 | 3-29-51 | 191.5 | 49.0% | 93.9 | 96.9 | 97% | 81.1 |
| Eagle Peak | 7500 | 4- 2-51 | 35.9 | 37.8% | 13.6 | 18.7 | 73% | 17.9 |
| Blue Lake Ranch | 7300 | 4- 3-51 | 22.0 | 42.5% | 9.4 | 11.6 | 81% | 11.3 |
| Cedar Pass | 7200 | 4- 2-51 | 33.6 | 38.1% | 12.8 | 20.6 | 62% | 19.1 |
| Blacks Mountain | 6650 | 3-30-51 | 12.8 | 41.1% | 5.3 | 8.5 | 62% | 8.4 |
| Medicine Lake | 6520 | Report Not Received | | - | - | 32.4 | - | 25.5 |
| Adin Mountain | 6100 | 4- 2-51 | 15.7 | 42.5% | 6.7 | 14.2 | 47% | 8.9 |
| Thousand Lakes | 6500 | 3-31-51 | 69.1 | 46.0% | 31.8 | 47.3 | 67% | 40.9 |
| Snow Mountain | 6200 | 3-30-51 | 53.0 | 51.4% | 27.3 | 40.5 | 67% | 36.8 |
| Manzanita Lake | 6000 | 3-30-51 | 15.7 | 46.2% | 7.3 | 8.8 | 83% | 6.8 |
| McElroy Pass | 5800 | 3-30-51 | 4.3 | 36.3 | 1.6 | 1.8 | 89% | 3.7 |
| Willow Creek Summit | 5600 | Report Not Received | | - | - | 2.6 | - | No Snow |
| Halls Flat | 5600 | 3-30-51 | No Snow On Course | | - | 3.7 | 0% | Flooded |
| Stouts Meadow | 5300 | 3-30-51 | 67.5 | 47.3% | 31.9 | 49.1 | 65% | 39.0 |
| Burney Springs | 4800 | 4- 1-51 | No Snow On Course | | - | - | 0% | 2.7 |
| Widow Valley Summit | 4700 | Report Not Received | | - | - | 4.2 | - | 4.6 |
| Dead Horse Canyon | 4500 | 4- 2-51 | 26.3 | 45.1% | 11.8 | 11.8 | 100% | 13.7 |
| TRINITY RIVER | | | | | | | | |
| Seven Up | 7400 | 4- 1-51 | 117.3 | 45.7% | 53.6 | 66.8 | 80% | 34.6 |
| Deadfall Lakes | 7300 | 3-31-51 | 64.4 | 44.4% | 28.6 | 37.5 | 76% | 27.2 |
| Red Rock Mountain | 6600 | 3-31-51 | 84.6 | 44.1% | 37.3 | 50.0 | 75% | 34.3 |
| Bear Basin | 6500 | 4- 1-51 | 62.6 | 49.1% | 30.7 | 48.0 | 64% | 28.6 |
| Wolford Cabin | 6400 | 3-27-51 | 78.8 | 42.3% | 33.3 | New Course | 1948 | 32.6 |
| Shimmy Lake | 6400 | 4- 2-51 | 75.3 | 45.6% | 34.4 | 52.6 | 65% | 34.4 |
| Whalan Station | 5900 | 4- 6-51 | 19.6 | 41.8% | 8.2 | 19.4 | 42% | 18.1 |
| Highland Lakes | 5700 | Report Not Received | | - | - | 34.9 | - | 25.8 |
| Munbo Basin | 5700 | 4- 4-51 | 33.7 | 44.8% | 15.1 | 24.4 | 62% | 26.5 |
| Big Flat | 5100 | 3-27-51 | 21.3 | 45.7% | 9.7 | 18.7 | 53% | 16.0 |
| STONY CREEK | | | | | | | | |
| Anthony Peak | 6200 | 4- 1-51 | 41.7 | 49.3% | 20.6 | 32.1 | 64% | 35.5 |
| Plaskett Meadows | 6000 | 4- 2-51 | 24.8 | 46.4% | 11.5 | 21.5 | 53% | 25.5 |
| FEATHER RIVER | | | | | | | | |
| Mount Lassen | 8400 | 3-29-51 | 191.5 | 49.0% | 93.9 | 96.9 | 97% | 81.1 |
| Mount Dyer | 7400 | 4- 5-51 | 43.5 | 41.5% | 18.1 | 28.2 | 64% | 26.1 |
| Rowland Creek | 6850 | 4- 2-51 | 27.2 | 39.8% | 10.8 | New Course | 1950 | 19.6 |
| Church Meadows | 6700 | 3-31-51 | 49.5 | 44.2% | 21.9 | 43.2 | 51% | 34.0 |

1, 2 See footnotes first page of this table.

TABLE 8 - SNOW SURVEY DATA FOR ALL COURSES - APRIL, 1951 - (Cont'd.)

| 1 DRAINAGE BASINS and SNOW COURSES | ELEVATION in FEET | DATE of SURVEY | DEPTH of SNOW Inches | DENSITY Per cent | WATER CONTENT Inches | 2 Normal Water content Inches | Per cent Normal water content | Corresponding Water Content 1950 Inches |
|---|---|---|---|---|---|---|---|---|
| FEATHER RIVER Cont'd. | | | | | | | | |
| Yuba Pass | 6700 | 4- 1-51 | 48.4 | 46.9% | 22.7 | 41.0 | 55% | 38.1 |
| Letterbox | 5500 | 3-28-51 | 81.5 | 53.5% | 43.5 | 61.9 | 70% | 59.7 |
| Silver Lake | 6500 | 3-29-51 | 48.9 | 48.0% | 23.4 | 39.6 | 59% | 25.3 |
| Eureka Bowl | 6500 | 3-30-51 | 63.9 | 45.2% | 28.7 | New Course | 1948 | 55.8 |
| Fredonia Pass | 6400 | 3-28-51 | 8.7 | 33.9% | 2.9 | 11.1 | 26% | Patches |
| Harkness Flat | 6400 | 4- 2-51 | 61.9 | 42.7% | 26.4 | 31.0 | 85% | 30.4 |
| Eureka Lake | 6300 | 3-30-51 | 45.3 | 43.6% | 19.8 | 43.3 | 46% | 34.8 |
| Three Lakes | 6100 | 3-29-51 | 64.7 | 43.9% | 27.8 | 43.6 | 64% | 45.2 |
| Mill Creek Flat | 5800 | 3-29-51 | 65.3 | 43.0% | 28.1 | 42.8 | 66% | 40.2 |
| Mount Stover | 5500 | 4- 5-51 | 14.2 | 39.3% | 5.6 | 17.5 | 32% | 16.1 |
| Browns Camp | 5400 | 3-27-51 | 34.7 | 44.7% | 15.5 | 25.4 | 61% | 22.5 |
| Gibsonville | 5400 | 4- 2-51 | 50.9 | 47.7% | 24.3 | New Course | 1950 | 37.5 |
| Haskins Flat | 5300 | 3-28-51 | 49.3 | 50.7% | 25.0 | 35.3 | 71% | 31.6 |
| Feather River Meadows | 5000 | 3-30-51 | 42.0 | 40.5% | 17.0 | 26.6 | 64% | 28.5 |
| Warner Creek | 5000 | 4- 3-51 | 23.8 | 41.8% | 9.9 | 19.2 | 52% | 18.3 |
| Humbug Summit | 5000 | 3-29-51 | 15.5 | 35.5% | 5.5 | 13.7 | 40% | 14.2 |
| Chester Flat | 4600 | 3-28-51 | 5.9 | 32.2% | 1.9 | 8.0 | 24% | 10.0 |
| SUSAN RIVER | | | | | | | | |
| Silver Lake | 6500 | 3-29-51 | 48.9 | 48.0% | 23.4 | 39.6 | 59% | 25.3 |
| Fredonia Pass | 6400 | 3-28-51 | 8.7 | 33.9% | 2.9 | 11.1 | 26% | Patches |
| Norvell Flat | 5700 | 3-29-51 | 26.5 | 46.0% | 12.2 | 18.3 | 66% | 17.7 |
| YUBA RIVER | | | | | | | | |
| Webber Peak | 8000 | 3-28-51 | 75.3 | 39.3% | 29.6 | 48.6 | 61% | 42.4 |
| Castle Creek #5 | 7370 | 3-28-51 | 91.5 | 46.6% | 42.6 | 53.7 | 79% | 59.9 |
| Meadow Lake | 7200 | 3-28-51 | 109.5 | 44.5% | 48.7 | 62.6 | 78% | 66.0 |
| Red Mountain | 7200 | 3-27-51 | 77.6 | 43.6% | 33.8 | 55.3 | 61% | 55.5 |
| Donner Summit | 7020 | 3-26-51 | 57.3 | 45.8% | 26.3 | 45.2 | 58% | 48.5 |
| Lake Sterling | 7000 | 3-27-51 | 81.8 | 42.9% | 35.1 | 61.8 | 57% | 63.9 |
| Sawmill Flat | 7000 | 3-27-51 | 76.7 | 44.2% | 33.9 | 57.8 | 59% | 59.4 |
| Soda Springs | 6750 | 3-26-51 | 52.5 | 47.8% | 25.1 | 41.5 | 60% | 45.4 |
| Yuba Pass | 6700 | 4- 1-51 | 48.4 | 46.9% | 22.7 | 41.0 | 55% | 38.1 |
| Church Meadows | 6700 | 3-31-51 | 49.5 | 44.2% | 21.9 | 43.2 | 51% | 34.0 |
| Furnace Flat | 6600 | 3-28-51 | 69.7 | 44.9% | 31.3 | 53.4 | 59% | 53.6 |
| Lake Fordyce | 6500 | 3-27-51 | 59.3 | 44.7% | 26.5 | 44.8 | 59% | 49.6 |
| Findley Peak | 6500 | 3-27-51 | 35.0 | 41.9% | 15.0 | 34.0 | 44% | 35.2 |
| Jackson Meadows | 6300 | 3-27-51 | 45.5 | 43.7% | 19.9 | 33.1 | 60% | 33.0 |
| Cisco | 5950 | 3-26-51 | 34.8 | 46.8% | 16.3 | 25.8 | 63% | 31.1 |

1, 2 See footnotes first page of this table.

TABLE 8 - SNOW SURVEY DATA FOR ALL COURSES - APRIL, 1951 - (Cont'd.)

| 1 DRAINAGE BASINS and SNOW COURSES | ELEVATION in FEET | DATE of SURVEY | DEPTH of SNOW Inches | DENSITY Per cent | WATER CONTENT Inches | 2 Normal Water content Inches | Per cent Normal water content | Corresponding Water Content 1950 Inches |
|---|---|---|---|---|---|---|---|---|
| YUBA RIVER Cont'd. | | | | | | | | |
| Cisco Flat | 5800 | 3-26-51 | 35.9 | 45.9% | 16.5 | 24.1 | 68% | 32.2 |
| Sardine Flat | 5800 | 3-31-51 | 19.4 | 47.4% | 9.2 | 17.6 | 52% | 20.4 |
| Six Mile Valley | 5700 | 3-29-51 | 35.3 | 51.2% | 18.1 | 25.5 | 71% | 28.9 |
| Bowman Lake | 5630 | 3-27-51 | 41.7 | 42.2% | 17.6 | 23.5 | 75% | 27.0 |
| Gibsonville | 5400 | 4- 2-51 | 50.9 | 47.7% | 24.3 | New Course | 1950 | 37.5 |
| Carpenter Flat | 4900 | 3-29-51 | 27.3 | 48.0% | 13.1 | 21.1 | 62% | 21.1 |
| Lake Spaulding | 4900 | 3-29-51 | 42.2 | 47.9% | 20.2 | 25.9 | 78% | 32.3 |
| TRUCKEE RIVER | | | | | | | | |
| Mount Rose (In Nevada) | 9000 | 4- 2-51 | 79.8 | 42.6% | 33.6 | 35.5 | 95% | 35.3 |
| Independence Lake | 8400 | 4- 1-51 | 88.7 | 41.9% | 37.2 | 49.0 | 76% | 46.3 |
| Webber Peak | 8000 | 3-28-51 | 75.3 | 39.3% | 29.6 | 48.6 | 61% | 42.4 |
| Donner Summit | 7020 | 3-26-51 | 57.3 | 45.8% | 26.3 | 45.2 | 58% | 48.5 |
| Independence Camp | 7000 | 3-31-51 | 36.2 | 41.9% | 15.2 | 23.1 | 66% | 29.6 |
| Ward Creek | 7000 | 3-31-51 | 69.9 | 44.6% | 31.2 | 53.0 | 59% | 56.1 |
| Webber Lake | 6800 | 3-28-51 | 56.0 | 39.6% | 22.2 | 36.0 | 62% | 38.4 |
| Sage Hen Creek | 6500 | 4- 2-51 | 19.5 | 37.9% | 7.4 | 20.8 | 35% | 22.8 |
| Truckee #2 | 6400 | 4- 1-51 | 11.6 | 37.9% | 4.4 | 18.0 | 24% | 18.6 |
| Independence Creek | 6300 | 3-31-51 | 9.3 | 36.5% | 3.4 | 15.4 | 22% | 16.8 |
| Tahoe City | 6250 | 3-30-51 | 2.0 | 45.0% | 0.9 | 17.0 | 53% | 13.7 |
| Truckee Ranger Station | 6000 | 3-31-51 | 3.6 | 30.5% | 1.1 | 9.4 | 12% | 14.8 |
| Donner Lake | 5950 | 3-31-51 | 29.0 | 46.2% | 13.4 | 25.7 | 52% | 25.7 |
| Boca | 5900 | 3-31-51 | No Snow On Course | | - | 5.1 | 0% | 5.4 |
| LAKE TAHOE | | | | | | | | |
| Mount Rose (In Nevada) | 9000 | 4- 2-51 | 79.8 | 42.6% | 33.6 | 35.5 | 95% | 35.3 |
| Lake Lucille | 8400 | 4- 1-51 | 139.6 | 43.3% | 60.5 | 65.5 | 92% | 74.6 |
| Rubicon Peak #1 | 8100 | 4- 1-51 | 128.6 | 36.3% | 46.7 | 49.2 | 95% | 59.7 |
| Marlette Lake | 8000 | 4- 1-51 | 27.9 | 39.4% | 11.0 | 29.7 | 37% | 26.9 |
| Hagans Mds. (Freel Peak) | 8000 | 3-30-51 | 14.7 | 44.2% | 6.5 | 20.6 | 32% | 27.6 |
| Rubicon Peak #2 | 7500 | 4- 1-51 | 40.7 | 39.3% | 16.0 | 38.0 | 42% | 38.8 |
| Echo Summit | 7500 | 4- 2-51 | 62.1 | 43.2% | 26.8 | 46.8 | 57% | 46.7 |
| Dagetts Pass (In Nevada) | 7350 | 4- 2-51 | 9.1 | 46.1% | 4.2 | 14.4 | 29% | 16.6 |
| Freel Bench | 7300 | 3-30-51 | 13.2 | 15.2% | 2.0 | 12.2 | 16% | 16.3 |
| Ward Creek | 7000 | 3-31-51 | 69.9 | 44.6% | 31.2 | 53.0 | 59% | 56.1 |
| Rubicon Peak #3 | 6700 | 4- 1-51 | 27.0 | 28.5% | 7.7 | 25.7 | 31% | N.S.M. |
| Glenbrook (In Nevada) #2 | 6900 | 4- 2-51 | 15.9 | 44.0% | 7.0 | 18.9 | 37% | 16.7 |
| Richardson #2 | 6500 | 3-31-51 | 21.0 | 46.2% | 9.7 | 18.8 | 52% | 25.8 |
| Upper Truckee | 6400 | 3-31-51 | Trace Only | | - | 11.0 | 0% | 13.0 |
| Little Valley (In Nevada) | 6300 | 3-31-51 | 5.4 | 38.9% | 2.1 | 11.4 | 18% | 8.1 |

1, 2 See footnotes first page of this table.

TABLE 8 - SNOW SURVEY DATA FOR ALL COURSES - APRIL, 1951 - (Cont'd.)

| 1 DRAINAGE BASINS and SNOW COURSES | ELEVATION in FEET | DATE of SURVEY | DEPTH of SNOW Inches | DENSITY Per cent | WATER CONTENT Inches | 2 Normal Water content Inches | Per cent Normal water content | Corresponding Water Content 1950 Inches |
|---|---|---|---|---|---|---|---|---|
| LAKE TAHOE Cont'd. | | | | | | | | |
| Tahoe City | 6250 | 3-30-51 | 2.0 | 45.0% | 0.9 | 17.0 | 53% | 13.7 |
| AMERICAN RIVER | | | | | | | | |
| Carson Pass | 8600 | 3-30-51 | 51.1 | 40.9% | 20.9 | 44.0 | 47% | 44.3 |
| Lake Lucille | 8400 | 4-1-51 | 139.6 | 43.3% | 60.5 | 65.5 | 92% | 74.6 |
| Rubicon Peak #1 | 8100 | 4-1-51 | 128.6 | 36.3% | 46.7 | 49.2 | 95% | 59.7 |
| Tragedy Springs | 7900 | 3-31-51 | 72.7 | 41.8% | 30.4 | 50.9 | 60% | 50.5 |
| Twin Lakes | 7900 | 3-31-51 | 38.7 | 40.6% | 15.7 | 34.7 | 45% | 38.8 |
| Echo Summit | 7500 | 4-2-51 | 62.1 | 43.2% | 26.8 | 46.8 | 57% | 46.7 |
| Lake Audrain | 7300 | 4-1-51 | 60.2 | 42.4% | 25.5 | 42.9 | 59% | 45.3 |
| Silver Lake | 7300 | 3-25-51 | 31.7 | 39.6% | 12.6 | 26.4 | 48% | 35.4 |
| Darrington | 7100 | 4-1-51 | 40.6 | 46.3% | 18.8 | 39.2 | 48% | 41.4 |
| Donner Summit | 7020 | 3-26-51 | 57.3 | 45.8% | 26.3 | 45.2 | 58% | 48.5 |
| Ward Creek | 7000 | 3-31-51 | 69.9 | 44.6% | 31.2 | 53.0 | 59% | 56.1 |
| Phillips | 6800 | 4-2-51 | 36.7 | 43.3% | 15.9 | 33.2 | 48% | 37.0 |
| Soda Springs | 6750 | 3-26-51 | 52.5 | 47.8% | 25.1 | 41.5 | 60% | 45.4 |
| Tamarack Flat | 6600 | 4-2-51 | 40.9 | 44.3% | 18.1 | 34.0 | 53% | 37.1 |
| Huysink | 6600 | 3-29-51 | 71.0 | 46.4% | 33.0 | 54.0 | 61% | 60.7 |
| Onion Creek | 6100 | 3-31-51 | 23.5 | 41.6% | 9.8 | 26.0 | 38% | 28.3 |
| Cisco | 5950 | 3-26-51 | 34.8 | 46.8% | 16.3 | 25.8 | 63% | 31.1 |
| Six Mile Valley | 5700 | 3-29-51 | 35.3 | 51.2 | 18.1 | 25.5 | 71% | 28.9 |
| Strawberry | 5700 | 4-2-51 | Patches | - | - | 10.1 | 0% | 15.9 |
| Carpenter Flat | 4900 | 3-29-51 | 27.3 | 48.0% | 13.1 | 21.1 | 62% | 21.1 |
| CARSON RIVER | | | | | | | | |
| Carson Pass | 8600 | 3-30-51 | 51.1 | 40.9% | 20.9 | 44.0 | 47% | 44.3 |
| Blue Lakes | 8000 | 3-27-51 | 58.0 | 38.1% | 22.1 | 42.8 | 52% | 42.5 |
| CONSUMNES RIVER | | | | | | | | |
| Corral Flat | 7300 | 3-31-51 | 48.4 | 43.3% | 21.0 | 46.3 | 45% | 47.6 |
| Lumberyard | 6600 | Report Not Received | | - | - | 37.1 | - | 37.7 |
| Hams Station | 5600 | Report Not Received | | - | - | 7.2 | - | 5.8 |
| MOKELUMNE RIVER | | | | | | | | |
| Carson Pass | 8600 | 3-30-51 | 51.1 | 40.9% | 20.9 | 44.0 | 47% | 44.3 |
| Blue Lakes | 8000 | 3-27-51 | 58.0 | 38.1% | 22.1 | 42.8 | 52% | 42.5 |
| Twin Lakes | 7900 | 3-31-51 | 38.7 | 40.6% | 15.7 | 34.7 | 45% | 38.8 |
| Tragedy Springs | 7900 | 3-31-51 | 72.7 | 41.8% | 30.4 | 50.9 | 60% | 50.5 |
| Wheeler Lake | 7800 | 3-26-51 | 80.9 | 44.1% | 35.6 | 61.7 | 63% | 58.4 |

1, 2 See footnotes first page of this table.

TABLE 8 - SNOW SURVEY DATA FOR ALL COURSES - APRIL, 1951 - (Cont'd.)

| 1 DRAINAGE BASINS and SNOW COURSES | ELEVATION in FEET | DATE of SURVEY | DEPTH of SNOW Inches | DENSITY Per cent | WATER CONTENT Inches | 2 Normal Water content Inches | Per cent Normal water content | Corresponding Water Content 1950 Inches |
|---|---|---|---|---|---|---|---|---|
| MOKELUMNE RIVER Cont'd. | | | | | | | | |
| Pacific Valley | 7500 | 3-27-51 | 50.6 | 43.6% | 22.0 | 42.8 | 51% | 45.2 |
| Lake Alpine | 7500 | 3-31-51 | 56.4 | 43.5% | 24.3 | 45.5 | 53% | 52.3 |
| Silver Lake | 7300 | 3-25-51 | 31.7 | 39.6% | 12.6 | 26.4 | 48% | 35.4 |
| Corral Flat | 7300 | 3-31-51 | 48.4 | 43.3% | 21.0 | 46.3 | 45% | 47.6 |
| Bear Valley Ridge | 6700 | 3-26-51 | 34.1 | 38.7% | 13.2 | 31.0 | 43% | 35.1 |
| Lumberyard | 6600 | Report Not Received | | - | - | 37.1 | - | 37.7 |
| Big Meadow | 6500 | 3-31-51 | 34.0 | 43.7% | 14.9 | 32.7 | 46% | 39.5 |
| Cottage Spring | 5700 | 3-31-51 | 13.1 | 43.9% | 5.8 | 12.7 | 46% | 14.8 |
| Hams Station | 5600 | Report Not Received | | - | - | 7.2 | - | 5.8 |
| Dorrington | 4800 | 3-31-51 | No Snow: | On Course | | 6.3 | 0% | 6.6 |
| Antelope Springs | 4350 | Report Not Received | | - | - | 1.5 | - | Patches |
| STANISLAUS RIVER | | | | | | | | |
| Sonora Pass | 8800 | 3-26-51 | 31.3 | 40.3% | 12.6 | 27.9 | 45% | 25.2 |
| Lower Relief Valley | 8300 | 3-27-51 | 58.1 | 43.9% | 25.5 | 47.5 | 54% | 40.7 |
| Soda Creek Flat | 7900 | 3-28-51 | 17.8 | 47.2% | 8.4 | 27.0 | 31% | 25.6 |
| Eagle Meadows | 7500 | 3-30-51 | 20.0 | 39.5% | 7.9 | 29.6 | 27% | 28.1 |
| Lake Alpine | 7500 | 3-31-51 | 56.4 | 43.5% | 24.3 | 45.5 | 53% | 52.3 |
| Pacific Valley | 7500 | 3-27-51 | 50.6 | 43.6% | 22.0 | 42.8 | 51% | 45.2 |
| Herring Creek | 7400 | 3-31-51 | 29.9 | 41.2% | 12.2 | 34.4 | 35% | 33.1 |
| Relief Dam | 7300 | 3-29-51 | 17.0 | 42.6% | 7.3 | 25.1 | 29% | 23.3 |
| Spicers | 6600 | 3-29-51 | 32.4 | 43.8% | 13.9 | 33.1 | 42% | 34.6 |
| Niagara Flat | 6500 | 3-25-51 | 25.6 | 43.1% | 11.1 | 24.5 | 45% | 25.1 |
| Big Meadow | 6500 | 3-31-51 | 34.0 | 43.7% | 14.9 | 32.7 | 46% | 39.5 |
| Cottage Spring | 5700 | 3-31-51 | 13.1 | 43.9% | 5.8 | 12.7 | 46% | 14.8 |
| Dorrington | 4800 | 3-31-51 | No Snow | On Course | | 6.3 | 0% | 6.6 |
| WALKER RIVER | | | | | | | | |
| Virginia Lakes | 9500 | 3-28-51 | 26.1 | 40.6% | 10.6 | 21.2 | 50% | 16.4 |
| Center Mountain | 9400 | 3-31-51 | 85.8 | 42.3% | 36.3 | 43.3 | 84% | 38.9 |
| Sonora Pass | 8800 | 3-26-51 | 31.3 | 40.2% | 12.6 | 27.9 | 45% | 25.2 |
| Buckeye Forks | 8500 | 3-31-51 | 36.3 | 25.6% | 9.3 | 23.7 | 39% | 21.9 |
| Willow Flat | 8250 | 3-27-51 | No Snow | On Course | | 16.1 | 0% | 9.5 |
| Buckeye Roughs | 7900 | 3-30-51 | 15.7 | 36.3% | 5.7 | 23.8 | 24% | 24.0 |
| Leavitt Meadows | 7200 | 3-26-51 | No Snow | On Course | | 11.5 | 0% | 5.0 |
| TUOLUMNE RIVER | | | | | | | | |
| Fletcher Lake | 10300 | 3-28-51 | 81.7 | 37.7% | 30.8 | 37.6 | 82% | 36.0 |
| Tioga Pass | 9900 | 4-1-51 | 61.5 | 39.0% | 24.0 | 31.0 | 77% | 24.0 |

1, 2 See footnotes first page of this table.

TABLE 8 - SNOW SURVEY DATA FOR ALL COURSES - APRIL, 1951 - (Cont'd.)

| 1 DRAINAGE BASINS and SNOW COURSES | ELEVATION in FEET | DATE of SURVEY | DEPTH of SNOW Inches | DENSITY Per cent | WATER CONTENT Inches | 2 Normal Water content Inches | Per cent Normal water content | Corresponding Water Content 1950 Inches |
|---|---|---|---|---|---|---|---|---|
| TUOLUMNE RIVER Cont'd. | | | | | | | | |
| Dana Meadows | 9700 | 3-29-51 | 75.8 | 40.4% | 30.6 | 34.0 | 90% | 29.5 |
| Rafferty Meadows | 9600 | 3-28-51 | 72.7 | 40.0% | 29.1 | 37.5 | 78% | 34.1 |
| Center Mountain | 9400 | 3-31-51 | 85.8 | 42.3% | 36.3 | 43.3 | 84% | 38.9 |
| Bond Pass | 9300 | 3-31-51 | 101.2 | 46.0% | 46.5 | 49.7 | 93% | 46.0 |
| Grace Meadows | 8800 | 3-30-51 | 60.0 | 42.4% | 25.4 | 46.3 | 55% | 40.2 |
| Snow Flat | 8700 | 3-26-51 | 74.4 | 42.8% | 31.8 | 48.5 | 65% | 42.0 |
| Tuolumne Meadows | 8600 | 3-27-51 | 33.1 | 41.2% | 13.6 | 25.3 | 54% | 25.6 |
| Horse Meadow | 8400 | 3-31-51 | 84.7 | 43.4% | 36.7 | 58.3 | 63% | 45.4 |
| Lower Relief Valley | 8300 | 3-27-51 | 58.1 | 43.9% | 25.5 | 47.5 | 54% | 40.7 |
| Spotted Fawn | 8000 | 4- 1-51 | 70.0 | 42.3% | 29.6 | 61.6 | 48% | 46.9 |
| Wilmer Lake | 8000 | 3-30-51 | 86.7 | 40.2% | 34.8 | 51.5 | 67% | 47.7 |
| Saches Springs | 7900 | 4- 1-51 | 40.6 | 44.6% | 18.1 | 52.1 | 35% | 38.6 |
| Huckleberry Lake | 7800 | 4- 1-51 | 61.8 | 41.2% | 25.5 | 53.5 | 21% | 40.4 |
| Paradise | 7600 | 3-28-51 | 48.9 | 44.8% | 21.9 | 49.2 | 44% | 47.1 |
| Gin Flat | 7100 | 3-30-51 | 31.8 | 42.9% | 13.6 | 39.1 | 35% | 35.9 |
| Kibbey Ridge - Upper | 6700 | 4- 2-51 | 18.6 | 40.9 | 7.6 | 24.4 | 31% | 19.6 |
| Vernon Lake | 6700 | 3-28-51 | 33.0 | 42.7% | 14.1 | 31.0 | 45% | 29.9 |
| Beehive Meadow | 6500 | 3-27-51 | 37.2 | 40.8% | 15.2 | 29.5 | 51% | 28.2 |
| Bell Meadows | 6500 | 4- 2-51 | 7.1 | 40.1% | 2.9 | 21.6 | 13% | 19.6 |
| Kibbey Ridge - Lower | 6200 | 4- 2-51 | 26.0 | 43.1% | 11.2 | 32.0 | 35% | 27.2 |
| MERCED RIVER | | | | | | | | |
| Fletcher Lake | 10300 | 3-28-51 | 81.7 | 37.7% | 30.8 | 37.6 | 82% | 36.0 |
| Snow Flat | 8700 | 3-26-51 | 74.4 | 42.8% | 31.8 | 48.5 | 65% | 42.0 |
| Ostrander Lake | 8200 | 3-27-51 | 45.2 | 38.1% | 17.2 | 42.8 | 40% | 35.1 |
| Lake Tenaya | 8150 | 3-27-51 | 45.9 | 40.5% | 18.6 | 39.3 | 47% | 42.1 |
| Gin Flat | 7100 | 3-30-51 | 31.8 | 42.9% | 13.6 | 39.1 | 35% | 35.9 |
| Peregoy Meadows | 7000 | 4- 1-51 | 32.9 | 39.2% | 12.9 | 32.3 | 40% | 30.0 |
| MONO LAKE | | | | | | | | |
| Gem Pass | 10450 | 4- 4-51 | 64.6 | 43.6% | 28.2 | 30.9 | 91% | 24.2 |
| Saddle Bags Lake | 10000 | 4- 1-51 | 77.9 | 45.2% | 35.2 | 36.9 | 95% | 35.4 |
| Tioga Pass | 9900 | 4- 1-51 | 61.2 | 39.2% | 24.0 | 31.0 | 77% | 24.0 |
| Dana Meadows | 9700 | 3-29-51 | 75.8 | 40.4% | 30.6 | 34.0 | 90% | 29.5 |
| Rhinedollar Lake | 9500 | 4- 1-51 | 63.8 | 39.0% | 24.9 | 34.2 | 73% | 29.9 |
| Agnew Pass | 9450 | 4- 3-51 | 45.6 | 45.8% | 20.9 | 34.6 | 60% | 25.3 |
| Gem Lake | 9200 | 4- 4-51 | 35.7 | 41.1% | 14.7 | 30.5 | 48% | 22.8 |

1, 2 See footnotes first page of this table.

TABLE 8 - SNOW SURVEY DATA FOR ALL COURSES - APRIL, 1951 - (Cont'd.)

| 1 DRAINAGE BASINS and SNOW COURSES | ELEVATION in FEET | DATE of SURVEY | DEPTH of SNOW Inches | DENSITY Per cent | WATER CONTENT Inches | 2 Normal Water content Inches | Per cent Normal water content | Corresponding Water Content 1950 Inches |
|---|---|---|---|---|---|---|---|---|
| UPPER SAN JOAQUIN RIVER | | | | | | | | |
| Mono Pass | 11450 | Report Not | Received | - | - | New Course | 1950 | 24.6 |
| Piute Pass | 11200 | 4- 6-51 | 92.3 | 41.0% | 37.8 | 35.5 | 106% | 34.1 |
| Emerald Lake | 10800 | 4- 5-51 | 84.9 | 41.3% | 35.1 | 40.4 | 87% | 34.9 |
| Blackcap Basin | 10800 | 4- 2-51 | 71.2 | 41.8% | 29.8 | 39.3 | 76% | 29.8 |
| Pioneer Basin | 10300 | Report Not | Received | - | - | New Course | 1950 | 33.6 |
| Heart Lake | 10100 | 4- 3-51 | 65.5 | 38.9% | 25.5 | 31.9 | 80% | 25.0 |
| Volcanic Knob | 10100 | 4- 1-51 | 80.2 | 41.3% | 33.1 | 34.5 | 96% | 29.7 |
| Rose Marie | 10000 | 4- 2-51 | 67.7 | 40.5% | 27.4 | 33.3 | 82% | 26.6 |
| Colby Meadow | 10000 | 4- 5-51 | 46.6 | 38.0% | 17.7 | 25.5 | 69% | 20.3 |
| Upper Burnt Corral | 9700 | 3-31-51 | 75.4 | 40.8% | 30.8 | 39.0 | 79% | 30.0 |
| Mammoth Pass | 9500 | 4- 4-51 | 81.6 | 41.4% | 33.8 | 49.5 | 68% | 38.9 |
| Agnew Pass | 9450 | 4- 3-51 | 45.6 | 45.8% | 20.9 | 34.6 | 60% | 25.3 |
| Kaiser Pass | 9200 | 3-29-51 | 56.6 | 42.0% | 23.8 | 42.7 | 56% | 38.7 |
| Dutch Lake | 9100 | 3-30-51 | 44.8 | 37.3% | 16.7 | 31.3 | 53% | 26.9 |
| Coyote Lakes | 8600 | 3-28-51 | 42.0 | 37.1% | 15.6 | 35.8 | 44% | 30.6 |
| Cora Lakes | 8500 | 4- 1-51 | 45.0 | 39.7% | 17.9 | 40.2 | 44% | 31.3 |
| Nellie Lake | 8250 | 3-26-51 | 42.7 | 41.0% | 17.5 | 39.2 | 45% | 38.5 |
| Vermilion Valley | 7500 | 3-31-51 | 13.8 | 35.5% | 4.9 | 14.2 | 34% | 11.1 |
| Chilkoot Lake | 7450 | 4- 2-51 | 26.4 | 47.0% | 12.4 | 44.6 | 28% | 32.9 |
| Chilkoot Meadow | 7250 | 4- 3-51 | 21.5 | 46.9% | 10.1 | 43.0 | 23% | 31.8 |
| Florence Lake | 7200 | 3-30-51 | Patches | only | - | 8.7 | 0% | 7.6 |
| Huntington Lake | 7000 | 3-26-51 | 20.1 | 42.8% | 8.6 | 23.6 | 36% | 22.1 |
| Clover Meadow | 7000 | 3-31-51 | 18.2 | 42.7% | 7.8 | 26.9 | 29% | 20.1 |
| Jackass Meadows | 7000 | 3-31-51 | 7.7 | 52.5% | 4.0 | 25.1 | 16% | 18.0 |
| Chiquito Creek | 6800 | 4- 2-51 | 10.1 | 42.6% | 4.3 | 23.9 | 18% | 19.5 |
| Beasore Meadow | 6800 | 4- 2-51 | 13.4 | 50.5% | 6.7 | 31.8 | 21% | 26.9 |
| Poison Meadow | 6500 | 4- 3-51 | 15.9 | 45.9% | 7.3 | 27.0 | 27% | 20.1 |
| KINGS RIVER | | | | | | | | |
| Bishop Pass | 11400 | 4- 8-51 | 76.7 | 41.6% | 31.9 | 35.7 | 89% | 36.7 |
| Blackcap Basin | 10800 | 4- 2-51 | 71.2 | 41.8% | 29.8 | 39.3 | 76% | 29.8 |
| Upper Burnt Corral | 9700 | 3-31-51 | 75.4 | 40.8% | 30.8 | 39.0 | 79% | 30.0 |
| Beard Meadow | 9300 | 4- 3-51 | 71.8 | 42.9% | 30.8 | 36.1 | 85% | 28.4 |
| Rowell Meadow | 9200 | 4- 2-51 | 26.9 | 43.2% | 11.6 | 32.5 | 36% | 23.7 |
| Woodchuck Meadow | 9100 | 4- 4-51 | 38.0 | 43.2% | 16.4 | 35.5 | 46% | 26.0 |
| Swamp Meadow | 9000 | 3-29-51 | 30.5 | 36.1% | 11.0 | 42.0 | 26% | 35.3 |
| Round Corral | 9000 | 4- 4-51 | 50.4 | 40.5% | 20.4 | 39.0 | 52% | 24.8 |
| Junction Meadow | 8500 | 3-31-51 | 20.4 | 33.4% | 6.8 | 23.1 | 29% | 18.5 |
| Helm Meadow | 8500 | 3-30-51 | 26.2 | 40.8% | 10.7 | 33.0 | 32% | 22.0 |

1, 2 See footnotes first page of this table.

TABLE 8 - SNOW SURVEY DATA FOR ALL COURSES - APRIL, 1951 - (Cont'd.)

| 1 DRAINAGE BASINS and SNOW COURSES | ELEVATION in FEET | DATE of SURVEY | DEPTH of SNOW Inches | DENSITY Per cent | WATER CONTENT Inches | 2 Normal Water content Inches | Per cent Normal water content | Corresponding Water Content 1950 Inches |
|---|---|---|---|---|---|---|---|---|
| KINGS RIVER Cont'd. | | | | | | | | |
| Long Meadow | 8500 | 4- 1-51 | 43.6 | 37.6% | 16.4 | 32.8 | 50% | 20.8 |
| Statum Meadow | 8300 | 4- 5-51 | 22.3 | 49.3% | 11.0 | 36.0 | 30% | 23.9 |
| Post Corral Meadow | 8200 | 4- 1-51 | 36.0 | 41.1% | 14.8 | 30.9 | 48% | 20.2 |
| Sand Meadow | 8050 | 3-30-51 | 30.5 | 36.1% | 11.0 | 33.2 | 33% | 24.8 |
| Big Meadows | 7660 | 4- 3-51 | 9.1 | 46.2% | 4.3 | 31.0 | 14% | 23.9 |
| Horse Corral Meadow | 7600 | 4- 2-51 | 5.9 | 42.6% | 2.5 | 21.8 | 11% | 16.1 |
| Bear Ridge | 7400 | 3-28-51 | 24.4 | 45.9% | 11.2 | 30.4 | 37% | 23.0 |
| Fred Meadows | 7200 | 3-28-51 | 11.6 | 48.3% | 5.6 | 25.2 | 22% | 19.4 |
| Grant Grove | 6660 | 3-31-51 | 5.9 | 44.9% | 2.7 | 15.5 | 17% | 11.7 |
| Cliff Camp | 6300 | 4- 5-51 | 2.3 | 52.2% | 1.2 | 15.3 | 08% | 2.3 |
| Dinkey Sand Flat | 5500 | 3-24-51 | 9.0 | 53.3% | 4.8 | 14.6 | 33% | 10.4 |
| KAWEAH RIVER | | | | | | | | |
| Panther Meadow | 8650 | 3-31-51 | 44.9 | 39.0% | 17.5 | 40.0 | 44% | 33.2 |
| Hockett Meadow | 8600 | 3-27-51 | 31.3 | 33.0% | 10.3 | 34.2 | 30% | 28.2 |
| Quinn Ranger Station | 8000 | 3-28-51 | 3.0 | 50.0% | 1.5 | 23.8 | 06% | 17.8 |
| Mineral King | 8000 | 3-25-51 | 10.4 | 37.0% | 3.8 | New Course | 1948 | 23.0 |
| Big Meadows | 7660 | 4- 3-51 | 9.4 | 45.8% | 4.3 | 31.0 | 14% | 23.9 |
| Giant Forest | 6360 | 3-31-51 | 16.9 | 46.1% | 7.8 | 18.6 | 42% | 13.9 |
| TULE RIVER | | | | | | | | |
| Quaking Aspen | 7000 | 3-31-51 | 4.4 | 41.1% | 1.8 | 16.3 | 11% | 6.5 |
| Old Enterprise Mill | 6600 | 4- 1-51 | 14.6 | 42.7% | 6.2 | 19.7 | 31% | 12.6 |
| DEER CREEK | | | | | | | | |
| Dead Horse Meadow | 7200 | 3-30-51 | 5.2 | 41.7% | 2.2 | 15.2 | 14% | 5.6 |
| KERN RIVER | | | | | | | | |
| Big Horn Plateau | 11400 | 3-28-51 | 46.1 | 36.1% | 16.6 | New Course | 1949 | 20.4 |
| Cottonwood Pass | 11100 | 3-25-51 | 22.4 | 36.8% | 8.3 | New Course | 1948 | 10.9 |
| Siberian Pass | 10800 | 3-26-51 | 38.1 | 32.9% | 12.6 | New Course | 1948 | 17.7 |
| Crabtree Meadow | 10800 | 3-27-51 | 38.2 | 26.0% | 9.9 | New Course | 1949 | 17.5 |
| Guyot Flat | 10700 | 3-27-51 | 37.0 | 31.8% | 11.8 | New Course | 1949 | 18.9 |
| Sandy Meadows | 10700 | 3-28-51 | 34.3 | 33.2% | 11.4 | New Course | 1949 | 18.6 |
| Tyndall Creek | 10600 | 3-29-51 | 36.4 | 30.7% | 11.2 | New Course | 1949 | 18.0 |
| Rock Creek | 9900 | 3-26-51 | 22.6 | 33.3% | 7.5 | New Course | 1949 | 17.0 |
| Big Whitney Meadow | 9800 | 3-25-51 | 25.7 | 35.6% | 9.2 | New Course | 1948 | 16.4 |
| Round Meadow | 9000 | 4- 1-51 | 8.2 | 35.3% | 2.9 | 27.6 | 11% | 28.5 |
| Ramshaw Meadows | 8800 | 3-28-51 | No Snow On Course | | - | 12.4 | 0% | 9.8 |

1, 2 See footnotes first page this table.

TABLE 8 - SNOW SURVEY DATA FOR ALL COURSES - APRIL, 1951 - (Cont'd.)

| 1 DRAINAGE BASINS and SNOW COURSES | ELEVATION in FEET | DATE of SURVEY | DEPTH of SNOW Inches | DENSITY per cent | WATER CONTENT Inches | 2 Normal Water content Inches | Per cent Normal water content | Corresponding Water Content 1950 Inches |
|---|---|---|---|---|---|---|---|---|
| KERN RIVER Cont'd. | | | | | | | | |
| Little Whitney Meadows | 8500 | 3-27-51 | No Snow | On Course | - | 14.9 | 0% | 11.2 |
| Bonita Meadows | 8400 | 3-31-51 | No Snow | On Course | - | 15.2 | 0% | 11.9 |
| Casa Vieja Meadows | 8400 | 3-30-51 | No Snow | On Course | - | 20.9 | 0% | 20.3 |
| Monache Meadows | 8000 | 3-28-51 | No Snow | On Course | - | 9.7 | 0% | No Snow |
| Quinn Ranger Station | 8000 | 3-28-51 | 3.0 | 50.0% | 1.5 | 23.8 | 06% | 17.8 |
| Beach Meadows | 7800 | 3-31-51 | No Snow | On Course | - | 11.1 | 0% | 7.3 |
| Burnt Corral Meadow | 6200 | 3-26-51 | No Snow | On Course | - | 5.3 | 0% | No Snow |
| Lloyd Meadows | 5600 | 3-25-51 | No Snow | On Course | - | 4.5 | 0% | No Snow |
| OWENS RIVER | | | | | | | | |
| UPPER OWNES | | | | | | | | |
| Mammoth Pass #1 | 9500 | 4- 3-51 | 81.6 | 41.4% | 33.8 | 49.5 | 68% | 38.9 |
| Minarettes #2 | 9000 | 4- 3-51 | 49.1 | 38.3% | 18.8 | 35.8 | 52% | 30.2 |
| Minarettes #1 | 8300 | 4- 3-51 | 13.3 | 39.1% | 5.2 | 23.4 | 22% | 20.0 |
| Mammoth Pass #2 | 8300 | 4- 3-51 | 9.0 | 37.8% | 3.4 | 23.9 | 14% | 18.3 |
| BISHOP CREEK | | | | | | | | |
| Bishop Pass | 11400 | 4- 8-51 | 76.7 | 41.6% | 31.9 | 35.7 | 89% | 36.7 |
| Piute Pass | 11200 | 4- 6-51 | 92.3 | 41.0% | 37.8 | 35.5 | 106% | 34.1 |
| East Piute Pass | 10800 | 4- 5-51 | 27.9 | 39.9% | 11.1 | 19.4 | 57% | 10.4 |
| Sawmill | 10200 | 4- 7-51 | 34.2 | 39.5% | 13.5 | 21.5 | 63% | 16.8 |
| North Lake | 9500 | 4- 5-51 | No Snow | on Course | - | 11.6 | 0% | 6.9 |
| South Fork | 9000 | 4- 7-51 | No Snow | on Course | - | 7.2 | 0% | No Snow |
| Bishop Park | 8500 | 4- 5-51 | No Snow | on Course | - | 6.3 | 0% | No Snow |
| ROCK CREEK | | | | | | | | |
| Rock Creek #3 | 10000 | 4- 2-51 | 22.0 | 38.6% | 8.5 | 15.9 | 53% | 14.5 |
| Rock Creek #2 | 9050 | 4- 2-51 | 1.6 | 43.7% | 0.7 | 10.9 | 6% | 12.8 |
| Rock Creek #1 | 8700 | 4- 2-51 | No Snow | On Course | - | 10.2 | 0% | 10.0 |
| BIG PINE CREEK | | | | | | | | |
| Big Pine Creek #1 | 10000 | 3-26-51 | 28.2 | 32.6% | 9.2 | 26.4 | 35% | 19.5 |
| Big Pine Creek #3 | 9800 | 3-26-51 | 9.2 | 38.0% | 3.5 | 18.7 | 19% | 14.0 |
| Big Pine Creek #2 | 9700 | 3-26-51 | 12.0 | 30.0% | 4.0 | 18.8 | 21% | 14.4 |
| COTTONWOOD CREEK | | | | | | | | |
| Cottonwood #2 | 11100 | 3-27-51 | 18.2 | 35.2% | 6.4 | 13.1 | 49% | 6.9 |
| Cottonwood #1 | 10600 | 3-27-51 | 8.0 | 35.0% | 2.8 | 12.4 | 23% | 8.0 |

1, 2 See footnotes first page this table.

TABLE 8 - SNOW SURVEY DATA FOR ALL COURSES - APRIL, 1951 - (Cont'd.)

| 1 DRAINAGE BASINS and SNOW COURSES | ELEVATION in FEET | DATE of SURVEY | DEPTH of SNOW Inches | DENSITY per cent | WATER CONTENT Inches | 2 Normal Water content Inches | Per cent Normal water content | Corresponding Water Content 1950 Inches |
|---|---|---|---|---|---|---|---|---|
| SOUTHERN CALIFORNIA | | | | | | | | |
| SANTA ANA RIVER | | | | | | | | |
| San Antonio #2 | 8400 | 3-29-51 | 8.4 | 39.3% | 3.3 | - | - | 12.6 |
| Ice House #3 | 8000 | 3-30-51 | 18.9 | 36.5% | 6.9 | - | - | 11.5 |
| Ice House #2 | 7660 | 3-30-51 | No Snow On Course | | - | - | - | 5.0 |
| LITTLE ROCK CREEK (Mojave Desert) | | | | | | | | |
| Buckhorn | 7100 | Report Not Received | | | | | | |
| Cedar Springs | 6500 | Report Not Received | | | | | | |
| Squaw Camp | 5800 | Report Not Received | | | | | | |
| SAN DIEGO COUNTY | | | | | | | | |
| COTTONWOOD CREEK | | | | | | | | |
| Little Laguna Meadow | 5200 | Report Not Received | | | | | | No Snow |
| New Course 1951 | | | | | | | | |
| BISHOP CREEK | | | | | | | | |
| Bishop Lakes | 11300 | 4-8-51 | 51.7 | 39.5% | 20.5 | New Course | 1951 | - |
| George Lake | 10550 | Data Not Received | | - | - | New Course | 1951 | - |

1, 2 See footnotes first page this table.

TABLE 9

WATER IN STORAGE IN MAJOR CALIFORNIA RESERVOIRS
AS OF MARCH 31, 1951

| Watershed | Reservoir | Operator | 10-year Mean 1941-50 (Acre-Feet) | Usable Capacity (Acre-Feet) | Water in Storage (Acre-Feet) 1950 | Water in Storage (Acre-Feet) 1951 | Storage in Per cent of 10 year Mean |
|---|---|---|---|---|---|---|---|
| NORTH COASTAL AREA | | | | | | | |
| Shasta River | Shasta R. (Dwinnel) | Montague Water Con.Dist | 21,290 | 33,000 | 13,900 | 21,500 | 101% |
| South Eel River | Scott(Lake Pilsbury) | Pacific Gas & Elec. Co. | 87,770 | 93,720 | 81,820 | 77,570 | 88% |
| SAN FRANCISCO BAY AREA | | | | | | | |
| Conn Creek | Conn Creek Dam | City of Napa | -2- | 30,500 | 30,500 | 30,500 | - |
| San Pablo Creek | San Pablo Dam | East Bay Municipal Utility District | 31,960 | 43,170 | 36,770 | 41,720 | 131% |
| San Leandro Creek | Upper San Leandro | East Bay Municipal Utility District | 28,440 | 41,400 | 22,660 | 40,260 | 142% |
| " " " | Lower " " | East Bay Municipal Utility District | 6,720 | 12,550 | 5,510 | 9,190 | 137% |
| Calaveras Creek | Calaveras | City & Co.of San Francisco | 62,130 | 96,820 | 25,530 | 90,195 | 145% |
| Laguna Creek | Upper Crystal Springs | City & Co.of San Francisco | 54,260 | 69,300 | 45,340 | 60,670 | 112% |
| San Mateo Creek | Lower " " | | | | | | |
| San Andreas Creek | San Andreas | City & Co.of San Francisco | 15,680 | 19,000 | 17,760 | 16,700 | 106% |
| Coyote Creek | Coyote | Santa Clara Valley | 15,720 | 24,560 | 4,840 | 20,630 | 131% |
| " " | Leroy Anderson | Water Conservation Dist | -1- | 75,000 | -1- | 19,500 | - |
| CENTRAL COASTAL AREA | | | | | | | |
| Salinas River | Salinas | U.S.Corps of Engineers | *12,670 | 26,000 | 11,000 | 9,450 | 75%* |
| Santa Ynez River | Gibralter | City of Santa Barbara | 6,360 | 14,500 | 3,700 | 3,180 | 50% |
| SOUTH COASTAL AREA | | | | | | | |
| Bear Creek | Bear Valley | Bear Valley Mutual Mutual Water Co. | 47,550 | 72,170 | 19,840 | 10,470 | 22% |
| San Jacinto River | Lake Hemet | Lake Hemet Water Co. | 7,970 | 13,400 | 1,400 | 740 | 09% |
| Temecula Creek | Vail | Vail Co. | -8- | 49,500 | 3,150 | 3,450 | - |
| San Gabriel River | Morris | Metropolitan Water Dist | 30,480 | 35,170 | 23,120 | 21,980 | 72% |
| San Luis Rey River | Henshaw | Vista I. D. | 124,110 | 203,580 | 29,010 | 5,200 | 04% |

TABLE 9

WATER IN STORAGE IN MAJOR CALIFORNIA RESERVOIRS AS OF MARCH 31, 1951 - Cont'd.

| Watershed | Reservoir | Operator | 10-year Mean 1941-50 (Acre-Feet) | Usable Capacity (Acre-Feet) | Water in Storage (Acre-Feet) 1950 | Water in Storage (Acre-Feet) 1951 | Storage in Per cent of 10 year Mean |
|---|---|---|---|---|---|---|---|
| SOUTH COASTAL AREA Cont'd. | | | | | | | |
| Boulder Creek | Cuyamaca | LaMesa, Lemon Grove & Spring Valley I. D. | 6,440 | 11,600 | 820 | 320 | 05% |
| Sweetwater River | Lake Loveland | Calif. Water & Telephone Co. | -7- | 25,250 | 800 | 1,000 | - |
| " " | Sweetwater (Main) | " " " " | 17,170 | 27,150 | 3,800 | 6,050 | 35% |
| City of San Diego | Municipal Reservoirs (10) | City of San Diego | 217,590 | 399,530 | 96,890 | 70,260 | 32% |
| CENTRAL VALLEY AREA | | | | | | | |
| Sacramento | Shasta | U.S. Bureau of Reclamation | -3- | 4,500,000 | 3,465,700 | 3,651,100 | - |
| Feather | Mountain Meadows | Pacific Gas & Electric Co. | 19,010 | 24,000 | 18,500 | 17,370 | 91% |
| | Lake Almanor | " " " " | 496,010 | 649,800 | 482,400 | 517,010 | 104% |
| | Bucks Storage | " " " " | 75,930 | 103,000 | 60,600 | 84,110 | 111% |
| | Butt Valley | " " " " | 39,920 | 50,000 | 43,300 | 33,870 | 85% |
| Yuba | Bowman Lake | Nevada Irrigation District | 17,310 | 68,000 | 18,000 | 65,960 | 381% |
| | Scotts Flat | " " " | -4- | 26,800 | 26,200 | 25,800 | - |
| | Spaulding System | Pacific Gas & Electric Co. | 77,310 | 150,000 | 73,200 | 98,290 | 127% |
| Bear | Combie | Nevada Irrigation District | 5,470 | 7,200 | 7,000 | 5,800 | 106% |
| American | Twin Lakes | Pacific Gas & Electric Co. | 8,560 | 21,300 | 5,800 | 20,110 | 235% |
| | Silver Lake | " " " " | 1,980 | 8,900 | 0 | 4,030 | 204% |
| Mokelumne | Salt Springs | " " " " | 22,540 | 139,000 | 24,500 | 81,080 | 360% |
| | Pardee | East Bay Municipal Utility District | 164,680 | 210,000 | 177,800 | 191,780 | 116% |
| Stanislaus | Relief | Pacific Gas & Electric Co. | 3,950 | 15,100 | 5,700 | 0 | 0% |
| | Strawberry | " " " " | 7,050 | 17,900 | 3,200 | 15,090 | 214% |
| | Melones | " " " " | 72,040 | 112,500 | 72,600 | 83,150 | 115% |
| Tuolumne | Lake Eleanor | City & Co. of San Francisco | 19,220 | 27,800 | 18,800 | 24,000 | 125% |
| | Hetch Hetchy | " " " " | 112,200 | 360,000 | 58,100 | 310,750 | 277% |
| | Don Pedro | Turlock & Modesto I. D. | 214,000 | 289,000 | 160,200 | 193,000 | 90% |
| | Owen | " " " " | -5- | 49,000 | 41,700 | 33,560 | - |
| | Dallas Warner | Modesto Irrigation District | -5- | 27,000 | 18,700 | 18,050 | - |
| Merced | Lake McClure | Merced Irrigation District | 179,470 | 281,000 | 104,200 | 242,700 | 135% |
| San Joaquin | Crane Valley | Pacific Gas & Electric Co. | 32,560 | 45,400 | 29,300 | 37,760 | 116% |
| | Florence Lake | Southern Calif. Edison Co. | 380 | 64,400 | 300 | 330 | 87% |
| | Huntington Lake | " " " " | 21,380 | 88,800 | 22,200 | 63,200 | 296% |
| | Shaver Lake | " " " " | 22,060 | 135,300 | 22,800 | 17,730 | 80% |
| | Millerton Lake (Friant) | U.S. B. R. | -6- | 520,500 | 205,000 | 359,900 | - |

TABLE 9

WATER IN STORAGE IN MAJOR CALIFORNIA RESERVOIRS AS OF MARCH 31, 1951 - Cont'd.

| Watershed | Reservoir | Operator | 10-year Mean 1941-50 (Acre-Feet) | Usable Capacity (Acre-Feet) | Water in Storage (Acre-Feet) 1950 | Water in Storage (Acre-Feet) 1951 | Storage in Per cent of 10 year Mean |
|---|---|---|---|---|---|---|---|
| LAHONTAN AREA | | | | | | | |
| Truckee River | Lake Tahoe | U.S. Bureau of Reclamation | 424,130 | 1,028,000 | 187,000 | 592,800 | 140% |
| Little Truckee | Boca | " " " | 10,670 | 41,050 | 16,130 | 19,400 | 182% |
| E. Walker River | Bridgeport | Walker River Irrigation Dist. | 35,470 | 42,450 | 19,780 | 43,960 | 124% |
| Leevining Creek | Saddlebag Lake | Calif. Electric Power Co. | 4,920 | 11,140 | 3,970 | 4,250 | 86% |
| Rush Creek | Gem Lake | " " " " | 2,810 | 17,600 | 860 | 2,620 | 93% |
| | Grant Lake | City of Los Angeles | 32,530 | 47,530 | 34,240 | 21,260 | 65% |
| Owens River | Long Valley (Lake Crowley) | " " " | *130,820 | 183,470 | 99,730 | 130,650 | 100%* |
| | Tinemaha | " " " | 4,010 | 16,410 | 60 | 1,060 | 26% |
| Bishop Creek | Hillside (South Lake) | Calif. Electric Power Co. | 4,510 | 13,190 | 2,780 | 3,510 | 78% |
| Rose Valley | Haiwee (South) | City of Los Angeles | 49,030 | 58,530 | 48,590 | 53,350 | 109% |

* 9 Year Mean
1. Water first stored 1951
2. Gates Closed December 1945
3. Water First Stored 1943
4. Water First Stored 1949
5. Incomplete Record
6. Reservoir not in complete operation for full period.
7. Not in Complete Operation Until 1945
8. Gates Closed November 1948

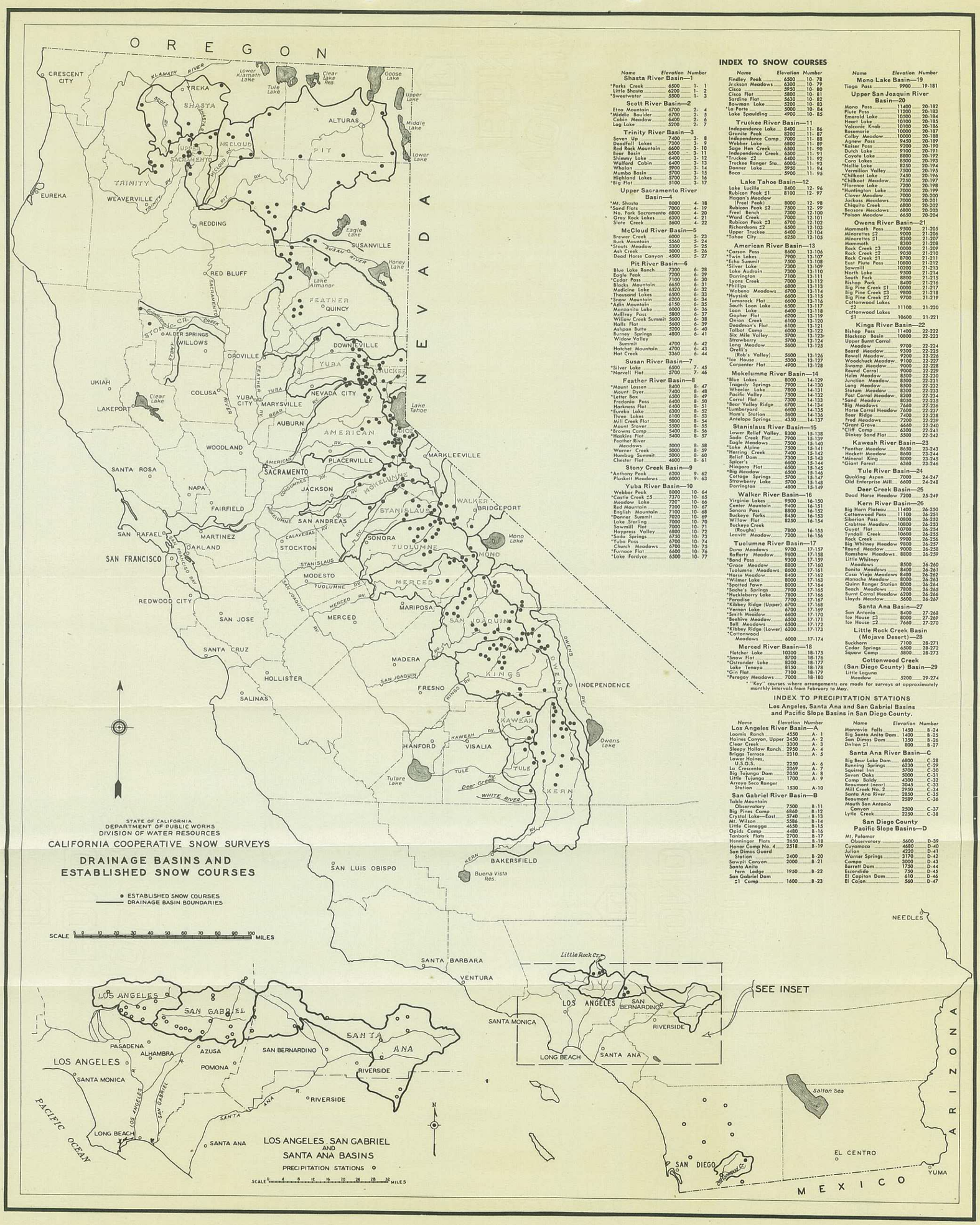
## APPENDIX

RESULTS OF SNOW SURVEYS MADE DURING THE PERIOD

March 1, 1951 to March 28, 1951

| DRAINAGE BASINS and SNOW COURSES | ELEVATION in FEET | DATE of SURVEY | Depth of SNOW Inches | DENSITY Per cent | WATER CONTENT Inches | 2 Normal Water Content for entire season (to April 1st) Inches | Percentage of total normal seasonal water content on ground at date of survey this year |
|---|---|---|---|---|---|---|---|
| UPPER SACRAMENTO RIVER | | | | | | | |
| Mt. Shasta | 8000 | 3-17-51 | 134.1 | 41.9% | 56.2 | 56.1 | 100% |
| Sand Flats | 7000 | 3-17-51 | 103.6 | 39.3% | 40.8 | 47.6 | 86% |
| YUBA RIVER | | | | | | | |
| Castle Creek #5 | 7370 | 3- 7-51 | 122.7 | 36.8% | 45.1 | 53.7 | 84% |
| Castle Creek #5 | 7370 | 3-14-51 | 110.3 | 39.8% | 44.0 | 53.7 | 82% |
| Castle Creek #5 | 7370 | 3-21-51 | 97.3 | 42.4% | 41.3 | 53.7 | 77% |
| Donner Summit | 7020 | 3- 9-51 | 86.3 | 34.7% | 29.9 | 45.2 | 66% |
| Soda Springs | 6750 | 3- 9-51 | 78.2 | 34.1% | 26.7 | 41.5 | 64% |
| Furnace Flat | 6600 | 3- 8-51 | 96.3 | 33.6% | 32.4 | 53.4 | 61% |
| Lake Fordyce | 6500 | 3- 8-51 | 83.0 | 33.2% | 27.5 | 44.8 | 61% |

2 See footnotes first page Table 5.




STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WATER RESOURCES

CALIFORNIA COOPERATIVE SNOW SURVEYS

## DRAINAGE BASINS AND ESTABLISHED SNOW COURSES

● ESTABLISHED SNOW COURSES
—— DRAINAGE BASIN BOUNDARIES

SCALE 0 10 20 30 40 50 60 70 80 90 100 MILES

## INDEX TO SNOW COURSES

| Name | Elevation | Number |
|---|---|---|
| **Shasta River Basin—1** | | |
| *Parks Creek | 6500 | 1- 1 |
| Little Shasta | 6200 | 1- 2 |
| *Sweetwater | 5500 | 1- 3 |
| **Scott River Basin—2** | | |
| Etna Mountain | 6700 | 2- 4 |
| *Middle Boulder | 6700 | 2- 5 |
| Cabin Meadow | 6400 | 2- 6 |
| Log Lake | 5200 | 2- 7 |
| **Trinity River Basin—3** | | |
| Seven Up | 7400 | 3- 8 |
| Deadfall Lakes | 7300 | 3- 9 |
| Red Rock Mountain | 6600 | 3- 10 |
| Bear Basin | 6500 | 3- 11 |
| Shimmy Lake | 6400 | 3- 12 |
| Wolford Cabin | 6400 | 3- 13 |
| Whalan | 5900 | 3- 14 |
| Mumbo Basin | 5700 | 3- 15 |
| Highland Lakes | 5700 | 3- 16 |
| *Big Flat | 5100 | 3- 17 |
| **Upper Sacramento River Basin—4** | | |
| *Mt. Shasta | 8000 | 4- 18 |
| *Sand Flats | 7000 | 4- 19 |
| No. Fork Sacramento | 6800 | 4- 20 |
| * Gray Rock Lakes | 6300 | 4- 21 |
| Slate Creek | 5600 | 4- 22 |
| **McCloud River Basin—5** | | |
| Brewer Creek | 6000 | 5- 23 |
| Buck Mountain | 5500 | 5- 24 |
| *Stouts Meadow | 5300 | 5- 25 |
| Ash Creek | 5000 | 5- 26 |
| Dead Horse Canyon | 4500 | 5- 27 |
| **Pit River Basin—6** | | |
| Blue Lake Ranch | 7200 | 6- 28 |
| Eagle Peak | 7200 | 6- 29 |
| *Cedar Pass | 7100 | 6- 30 |
| Blacks Mountain | 6650 | 6- 31 |
| Medicine Lake | 6570 | 6- 32 |
| Thousand Lakes | 6500 | 6- 33 |
| *Snow Mountain | 6300 | 6- 34 |
| *Adin Mountain | 6150 | 6- 35 |
| Manzanita Lake | 6000 | 6- 36 |
| McElroy Pass | 5800 | 6- 37 |
| Willow Creek Summit | 5600 | 6- 38 |
| Halls Flat | 5600 | 6- 39 |
| Ashpan Butte | 5200 | 6- 40 |
| Burney Springs | 4800 | 6- 41 |
| Widow Valley Summit | 4700 | 6- 42 |
| Hatchet Mountain | 4700 | 6- 43 |
| Hot Creek | 3360 | 6- 44 |
| **Susan River Basin—7** | | |
| *Silver Lake | 5500 | 7- 45 |
| *Norvell Flat | 5700 | 7- 46 |
| **Feather River Basin—8** | | |
| *Mount Lassen | 8400 | 8- 47 |
| Mount Dyer | 7400 | 8- 48 |
| *Letter Box | 6500 | 8- 49 |
| Fredonia Pass | 6400 | 8- 50 |
| Harkness Flat | 6400 | 8- 51 |
| *Eureka Lake | 6300 | 8- 52 |
| Three Lakes | 6100 | 8- 53 |
| Mill Creek Flat | 5800 | 8- 54 |
| Mount Stover | 5500 | 8- 55 |
| *Browns Camp | 5400 | 8- 56 |
| *Haskins Flat | 5400 | 8- 57 |
| Feather River Meadows | 5000 | 8- 58 |
| Warner Creek | 5000 | 8- 59 |
| Humbug Summit | 5000 | 8- 60 |
| Chester Flat | 4600 | 8- 61 |
| **Stony Creek Basin—9** | | |
| *Anthony Peak | 6200 | 9- 62 |
| Plaskett Meadows | 6000 | 9- 63 |
| **Yuba River Basin—10** | | |
| Webber Peak | 8000 | 10- 64 |
| *Castle Creek ±5 | 7370 | 10- 65 |
| Meadow Lake | 7260 | 10- 66 |
| Red Mountain | 7300 | 10- 67 |
| English Mountain | 7100 | 10- 68 |
| *Donner Summit | 7020 | 10- 69 |
| Lake Sterling | 7000 | 10- 70 |
| Sawmill Flat | 7000 | 10- 71 |
| Hoypress Valley | 6800 | 10- 72 |
| *Soda Springs | 6750 | 10- 73 |
| *Yuba Pass | 6700 | 10- 74 |
| Church Meadows | 6700 | 10- 75 |
| *Furnace Flat | 6600 | 10- 76 |
| *Lake Fordyce | 6500 | 10- 77 |
| Findley Peak | 6500 | 10- 78 |
| Jackson Meadows | 6300 | 10- 79 |
| Cisco | 5950 | 10- 80 |
| Cisco Flat | 5800 | 10- 81 |
| Sardine Flat | 5650 | 10- 82 |
| Bowman Lake | 5200 | 10- 83 |
| *La Porte | 5000 | 10- 84 |
| Lake Spaulding | 4900 | 10- 85 |
| **Truckee River Basin—11** | | |
| Independence Lake | 8400 | 11- 86 |
| Granite Peak | 8200 | 11- 87 |
| Independence Camp | 7000 | 11- 88 |
| Webber Lake | 6800 | 11- 89 |
| Sagehen Creek | 6500 | 11- 90 |
| Independence Creek | 6500 | 11- 91 |
| *Truckee ±2 | 6400 | 11- 92 |
| Truckee Ranger Sta. | 6000 | 11- 93 |
| Donner Lake | 5950 | 11- 94 |
| Boca | 5900 | 11- 95 |
| **Lake Tahoe Basin—12** | | |
| Lake Lucille | 8400 | 12- 96 |
| Rubicon Peak ±1 | 8100 | 12- 97 |
| Hagan's Meadow (Fred Peak) | 8000 | 12- 98 |
| Rubicon Peak ±2 | 7500 | 12- 99 |
| Fred Bench | 7300 | 12-100 |
| *Ward Creek | 7000 | 12-101 |
| Rubicon Peak ±3 | 6700 | 12-102 |
| Richardsons ±2 | 6500 | 12-103 |
| Upper Truckee | 6400 | 12-104 |
| *Tahoe City | 6250 | 12-105 |
| **American River Basin—13** | | |
| *Carson Pass | 8600 | 13-106 |
| *Twin Lakes | 7900 | 13-107 |
| *Echo Summit | 7500 | 13-108 |
| *Silver Lake | 7300 | 13-109 |
| Lake Audrain | 7300 | 13-110 |
| Darrington | 7100 | 13-111 |
| Lyons Creek | 7000 | 13-112 |
| *Phillips | 6800 | 13-113 |
| Wabena Meadows | 6700 | 13-114 |
| *Huysink | 6600 | 13-115 |
| Tamarack Flat | 6600 | 13-116 |
| South Loon Lake | 6500 | 13-117 |
| Loon Lake | 6400 | 13-118 |
| Gopher Flat | 6200 | 13-119 |
| Onion Creek | 6100 | 13-120 |
| Deadman's Flat | 6100 | 13-121 |
| Talbot Camp | 6000 | 13-122 |
| Six Mile Valley | 5700 | 13-123 |
| Strawberry | 5700 | 13-124 |
| Long Meadow | 5600 | 13-125 |
| Orelli's (Rob's Valley) | 5600 | 13-126 |
| *Ice House | 5300 | 13-127 |
| Carpenter Flat | 4900 | 13-128 |
| **Mokelumne River Basin—14** | | |
| *Blue Lakes | 8000 | 14-129 |
| Tragedy Springs | 7900 | 14-130 |
| Wheeler Lake | 7800 | 14-131 |
| Pacific Valley | 7500 | 14-132 |
| Corral Flat | 7300 | 14-133 |
| *Bear Valley Ridge | 6700 | 14-134 |
| *Lumberyard | 6600 | 14-135 |
| Hem's Station | 5600 | 14-136 |
| Antelope Springs | 4350 | 14-137 |
| **Stanislaus River Basin—15** | | |
| Lower Relief Valley | 8300 | 15-138 |
| Soda Creek Flat | 7900 | 15-139 |
| Eagle Meadows | 7500 | 15-140 |
| *Lake Alpine | 7300 | 15-141 |
| *Herring Creek | 7400 | 15-142 |
| Relief Dam | 7300 | 15-143 |
| Spicer's | 6600 | 15-144 |
| Niagara Flat | 6500 | 15-145 |
| Cottage Springs | 5700 | 15-146 |
| Strawberry Lake | 5700 | 15-148 |
| Darrington | 4800 | 15-149 |
| **Walker River Basin—16** | | |
| Virginia Lakes | 9500 | 16-150 |
| Center Mountain | 9400 | 16-151 |
| Sonora Pass | 8800 | 16-152 |
| Buckeye Parks | 8450 | 16-153 |
| Willow Flat | 8250 | 16-154 |
| Buckeye Creek (Roughs) | 7800 | 16-155 |
| Leavitt Meadow | 7300 | 16-156 |
| **Tuolumne River Basin—17** | | |
| Dana Meadows | 9700 | 17-157 |
| Rafferty Meadow | 9600 | 17-158 |
| *Bond Pass | 9300 | 17-159 |
| *Grace Meadow | 8800 | 17-160 |
| Tuolumne Meadows | 8600 | 17-161 |
| *Herse Meadow | 8400 | 17-162 |
| *Wilmer Lake | 8000 | 17-163 |
| *Spotted Fawn | 8000 | 17-164 |
| *Seche's Springs | 7900 | 17-165 |
| *Huckleberry Lake | 7800 | 17-166 |
| *Paradise | 7700 | 17-167 |
| *Kibbey Ridge (Upper) | 6700 | 17-168 |
| *Vernon Lake | 6700 | 17-169 |
| *Smith Meadow | 6600 | 17-170 |
| *Beehive Meadow | 6500 | 17-171 |
| Bell Meadows | 6500 | 17-172 |
| *Kibbey Ridge (Lower) | 6200 | 17-173 |
| *Cottonwood Meadows | 6000 | 17-174 |
| **Merced River Basin—18** | | |
| Fletcher Lake | 10300 | 18-175 |
| *Snow Flat | 8700 | 18-176 |
| *Ostrander Lake | 8200 | 18-177 |
| Lake Tenaya | 8150 | 18-178 |
| *Gin Flat | 7100 | 18-179 |
| *Peregoy Meadows | 7000 | 18-180 |
| **Mono Lake Basin—19** | | |
| Tioga Pass | 9900 | 19-181 |
| **Upper San Joaquin River Basin—20** | | |
| Mono Pass | 11400 | 20-182 |
| Piute Pass | 11200 | 20-183 |
| Emerald Lake | 10500 | 20-184 |
| Heart Lake | 10100 | 20-185 |
| Volcanic Knob | 10100 | 20-186 |
| Rosemarie | 10000 | 20-187 |
| Colby Meadow | 9900 | 20-188 |
| Agnew Pass | 9450 | 20-189 |
| *Kaiser Pass | 9200 | 20-190 |
| Dutch Lake | 9100 | 20-191 |
| Coyote Lake | 8800 | 20-192 |
| Cora Lakes | 8500 | 20-193 |
| *Nellie Lake | 8250 | 20-194 |
| Vermilion Valley | 7500 | 20-195 |
| *Chilkoot Lake | 7450 | 20-196 |
| *Chilkoot Meadow | 7250 | 20-197 |
| *Florence Lake | 7200 | 20-198 |
| *Huntington Lake | 7000 | 20-199 |
| Clover Meadow | 7000 | 20-200 |
| Jackass Meadows | 7000 | 20-201 |
| Chiquito Creek | 6800 | 20-202 |
| Beasore Meadows | 6800 | 20-203 |
| *Poison Meadow | 6650 | 20-204 |
| **Owens River Basin—21** | | |
| Mammoth Pass | 9500 | 21-205 |
| Minarettes ±3 | 9000 | 21-206 |
| Minarettes ±1 | 8300 | 21-207 |
| Mammoth | 8300 | 21-208 |
| Rock Creek ±3 | 10000 | 21-209 |
| Rock Creek ±2 | 9000 | 21-210 |
| Rock Creek ±1 | 8700 | 21-211 |
| East Fork Pass | 10800 | 21-212 |
| Sawmill | 10200 | 21-213 |
| North Lake | 9300 | 21-214 |
| South Fork | 8800 | 21-215 |
| Bishop Park | 8400 | 21-216 |
| Big Pine Creek ±1 | 10000 | 21-217 |
| Big Pine Creek ±3 | 9800 | 21-218 |
| Big Pine Creek ±2 | 9700 | 21-219 |
| Cottonwood Lakes ±2 | 11100 | 21-220 |
| Cottonwood Lakes ±1 | 10600 | 21-221 |
| **Kings River Basin—22** | | |
| Bishop Pass | 11400 | 22-222 |
| Blackcap Basin | 10800 | 22-223 |
| Upper Burnt Corral Meadow | 9700 | 22-224 |
| Beard Meadow | 9300 | 22-225 |
| Rowell Meadow | 9200 | 22-226 |
| Woodchuck Meadow | 9100 | 22-227 |
| Swamp Meadow | 9000 | 22-228 |
| Round Corral | 9000 | 22-229 |
| Helm Meadow | 8500 | 22-230 |
| Junction Meadow | 8500 | 22-231 |
| Long Meadow | 8500 | 22-232 |
| Statum Meadow | 8300 | 22-233 |
| Post Corral Meadow | 8200 | 22-234 |
| *Sand Meadow | 8050 | 22-235 |
| *Big Meadows | 7660 | 22-236 |
| Horse Corral Meadow | 7600 | 22-237 |
| Bear Ridge | 7400 | 22-238 |
| Fred Meadows | 7200 | 22-239 |
| *Grant Grove | 6660 | 22-240 |
| *Cliff Camp | 6300 | 22-241 |
| Dinkey Sand Flat | 5500 | 22-242 |
| **Kaweah River Basin—23** | | |
| *Panther Meadow | 8650 | 23-243 |
| Hockett Meadow | 8600 | 23-244 |
| *Mineral King | 8000 | 23-245 |
| *Giant Forest | 6360 | 23-246 |
| **Tule River Basin—24** | | |
| Quaking Aspen | 7000 | 24-247 |
| Old Enterprise Mill | 6600 | 24-248 |
| **Deer Creek Basin—25** | | |
| Dead Horse Meadow | 7200 | 25-249 |
| **Kern River Basin—26** | | |
| Big Horn Plateau | 11400 | 26-250 |
| Cottonwood Pass | 11100 | 26-251 |
| Siberian Pass | 10800 | 26-252 |
| Crabtree Meadow | 10800 | 26-253 |
| Guyot Flat | 10700 | 26-254 |
| Tyndall Creek | 10000 | 26-255 |
| Rock Creek | 9900 | 26-256 |
| Big Whitney Meadow | 9800 | 26-257 |
| *Round Meadow | 9000 | 26-258 |
| Ramshaw Meadows | 8800 | 26-259 |
| Little Whitney Meadows | 8500 | 26-260 |
| Bonita Meadows | 8400 | 26-261 |
| Casa Vieja Meadows | 8400 | 26-262 |
| Monache Meadow | 8000 | 26-263 |
| Quinn Ranger Station | 8000 | 26-264 |
| Beach Meadows | 7800 | 26-265 |
| Burnt Corral Meadow | 6200 | 26-266 |
| Lloyds Meadow | 5600 | 26-267 |
| **Santa Ana Basin—27** | | |
| San Antonio | 8400 | 27-268 |
| Ice House ±3 | 8000 | 27-269 |
| Ice House ±2 | 7660 | 27-270 |
| **Little Rock Creek Basin (Mojave Desert)—28** | | |
| Buckhorn | 7100 | 28-271 |
| Cedar Springs | 6500 | 28-272 |
| Squaw Camp | 5800 | 28-273 |
| **Cottonwood Creek (San Diego County) Basin—29** | | |
| Little Laguna Meadow | 5200 | 29-274 |

* "Key" courses where arrangements are made for surveys at approximately monthly intervals from February to May.

## INDEX TO PRECIPITATION STATIONS

Los Angeles, Santa Ana and San Gabriel Basins and Pacific Slope Basins in San Diego County.

| Name | Elevation | Number |
|---|---|---|
| **Los Angeles River Basin—A** | | |
| Loomis Ranch | 4550 | A- 1 |
| Haines Canyon, Upper | 3450 | A- 2 |
| Clear Creek | 3300 | A- 3 |
| Sleepy Hollow Ranch | 2950 | A- 4 |
| Briggs Terrace | 2310 | A- 5 |
| Lower Haines, U.S.G.S. | 2250 | A- 6 |
| La Crescenta | 2069 | A- 7 |
| Big Tujunga Dam | 2050 | A- 8 |
| Little Tujunga | 1700 | A- 9 |
| Arroyo Seco Ranger Station | 1530 | A-10 |
| **San Gabriel River Basin—B** | | |
| Table Mountain Observatory | 7500 | B-11 |
| Big Pines Camp | 6860 | B-12 |
| Crystal Lake—East | 5740 | B-13 |
| Mt. Wilson | 5586 | B-14 |
| Little Cienegga | 4650 | B-15 |
| Opids Camp | 4480 | B-16 |
| Tamarck Flats | 2700 | B-17 |
| Henninger Flats | 2550 | B-18 |
| Henar Camp No. 4 | 2518 | B-19 |
| San Dimas Guard Station | 2400 | B-20 |
| Sawpit Canyon | 2000 | B-21 |
| Santa Anita Fern Lodge | 1950 | B-22 |
| San Gabriel Dam ±1 Camp | 1600 | B-23 |
| Monrovia Falls | 1450 | B-24 |
| Big Santa Anita Dam | 1400 | B-25 |
| San Dimas Dam | 1350 | B-26 |
| Dalton ±1 | 800 | B-27 |
| **Santa Ana River Basin—C** | | |
| Big Bear Lake Dam | 6800 | C-28 |
| Running Springs | 6730 | C-29 |
| Squirrel Inn | 5700 | C-30 |
| Seven Oaks | 5000 | C-31 |
| Camp Baldy | 4300 | C-32 |
| Beaumont (near) | 3045 | C-33 |
| Mill Creek No. 2 | 2950 | C-34 |
| Santa Ana River | 2850 | C-35 |
| Beaumont | 2589 | C-36 |
| Mouth San Antonio Canyon | 2500 | C-37 |
| Lytle Creek | 2250 | C-38 |
| **San Diego County Pacific Slope Basins—D** | | |
| Mt. Palomar Observatory | 5600 | D-39 |
| Cuyamaca | 4680 | D-40 |
| Julian | 4220 | D-41 |
| Warner Springs | 3170 | D-42 |
| Campo | 3000 | D-43 |
| Barrett Dam | 1730 | D-44 |
| Escondido | 730 | D-45 |
| El Capitan Dam | 610 | D-46 |
| El Cajon | 560 | D-47 |