SECTION 8
SHELF
ITEM .2

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WATER RESOURCES

GOODWIN J. KNIGHT, Governor
FRANK B. DURKEE, Director of Public Works
A. D. EDMONSTON, State Engineer

REPORTS OF DIVISION OF WATER RESOURCES PREPARED PURSUANT TO SECTION 228, ARTICLE 2, CHAPTER 2, DIVISION 1 OF WATER CODE

WATER CONDITIONS IN CALIFORNIA

April 1, 1954

8

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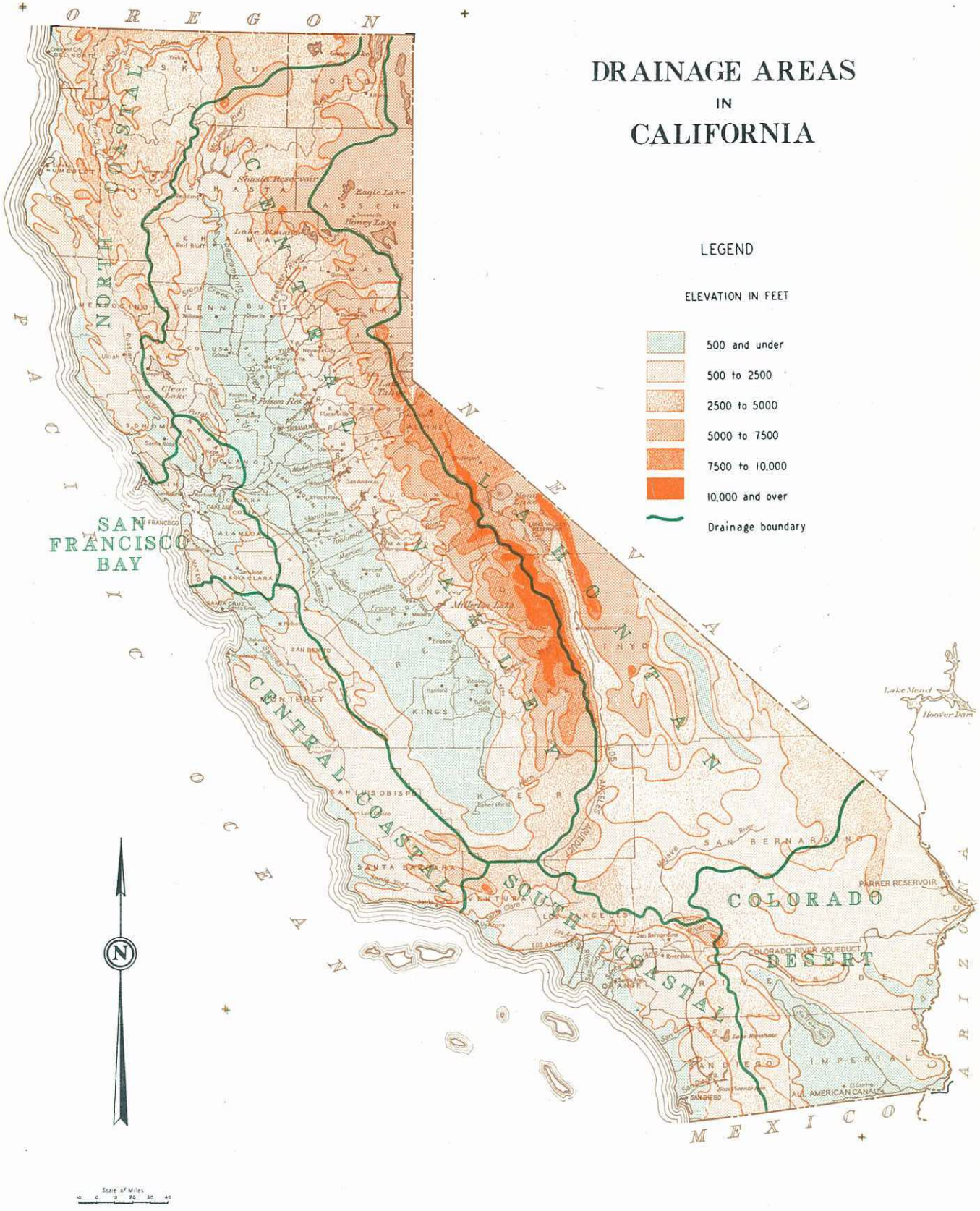
DRAINAGE AREAS IN CALIFORNIA



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AGENCIES COOPERATING WITH THE DIVISION OF WATER RESOURCES IN THE CALIFORNIA SNOW SURVEY PROGRAM

State and Federal Agencies

- Nevada Cooperative Snow Surveys
- Oregon Cooperative Snow Surveys
- 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 Division
  - National Park Service (3 National Parks)
- Department of the Army
  - Corps of Engineers

Public Utilities

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

Municipalities

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

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
- Saucelito Irrigation District
- Truckee-Carson Irrigation District
- Turlock Irrigation District
- Modesto Irrigation District
- Merced Irrigation District
- Terra Bella Irrigation District
- Vandalia Irrigation District
- Washoe County Water Conservation District
- Lower Tule River Irrigation District

Private Organizations

- Kern County Land Company
- The San Joaquin Canal Company

Other agencies furnishing data used in the compilation of this report are set forth in the appropriate tabulations in Appendix "B".

SECTION 1 - INTRODUCTION

Reports entitled "Water Conditions in California" are prepared as of the first of each month from February through May of each year by the Department of Public Works, Division of Water Resources, pursuant to Section 228, Article 2, Section 2, Division 1, of the Water Code which provides that:

> "The department shall gather and correlate information and data pertinent to an annual forecast of seasonal water crop, including the making of snow surveys, either independently or in cooperation with any person or any county, State, Federal, or other agency."

In the preparation of this report, data and assistance were furnished by many public and private agencies cooperating in the California Snow Survey program; by the operators of storage reservoirs; and by agencies collecting and reporting on precipitation, runoff and ground water. Agencies cooperating in the collection of precipitation, runoff, and snow survey data are listed immediately following the table of organization. Agencies supplying data on precipitation, snow depth, reservoir storage, runoff, and ground water conditions as set forth in Tables 9, 11, 12, 13, and 14 are named therein.

This report is the third of the 1954 series and sets forth the summary of water conditions as of April 1, 1954, including the results of all snow measurements, available precipitation records, stream flow data for representative water courses, records of water in storage in major reservoirs, and a statement of ground water conditions. The various phases of water supply are discussed herein with respect to the drainage areas delineated on the Frontispiece of the report.

Summary of Water Conditions

Water conditions in California as indicated by data available on April 1 have improved appreciably in many of the areas in which the outlook

one month ago was considered unsatisfactory or critical. The outlook for the remainder of the season is also generally more satisfactory than one year ago. The water supply, provided normal precipitation occurs during the remainder of the season, will be near or above normal north of the latitude of Oroville, slightly below normal in the remainder of the Central Valley and southern Lahontan Areas, and considerably below normal in the Santa Clara Valley, Central Coastal Area and South Coastal Area.

Data available prior to the occurrence of storms during March indicated generally unsatisfactory water conditions except in the northerly portions of the State. However, heavy precipitation over the southern half of the State during that month resulted in greatly improved water conditions in many areas having an unsatisfactory or critical outlook one month ago. Supplemental irrigation water supply from units of the Central Valley Project will be available for that portion of the San Joaquin Valley south of Fresno. Importation of water from the Colorado River will be required to alleviate the shortages indicated in portions of the South Coastal Area. With the present high degree of integration of major hydro and steam electric plants throughout the State, the indicated surface water supply will be adequate to meet hydro-electric power requirements.

The distribution of seasonal precipitation in per cent of normal to date is shown on Plate 1 following page 4. Precipitation and snowpack percentages of normal by drainage areas are set forth in Table 1, page 5. It will be noted that seasonal precipitation to date varies from 70 per cent of normal over the San Francisco Bay Area to an average of about 105 per cent over the North Coastal Area.

Snowpack in the Cascade Mountains and in the Sierra Nevada averages more than that of one year ago on the watersheds south of the Stanislaus River and is slightly below that amount on the northern watersheds. The water content determined by snow course measurements varies from 80 per cent of normal on the Yuba, American and Mokelumne River watersheds to an average of about 105 per cent on the upper Sacramento and Tule River watersheds. Normal precipitation conditions for the remainder of the season will produce normal or above normal snowmelt runoff in snowfed streams in the North Coastal Area, and in the upper Sacramento River in the Central Valley Area. In the remainder of the Central Valley Area, with normal precipitation, snowmelt runoff may be expected to vary between 92 per cent of normal in the Feather River and 75 per cent in the American River. A tabulation of representative snow course measurements is set forth in Table 2, page 6.

Storage in reservoirs utilized for conservation is below normal for April 1 only in the South Coastal and Colorado Desert Areas. With normal conditions, such reservoirs on streams tributary to the Central Valley Area may be expected to fill during the snowmelt period. A summary of the water in storage on April 1 is set forth in Table 3, page 7. It will be noted that the intrastate reservoirs had in storage about 63 per cent of their total capacity and that those reservoirs in operation for 10 or more years have in storage 97 per cent of their 10-year average as of April 1.

Runoff of California streams during the six-month period October 1, 1953, to March 31, 1954, has been below normal except for streams in the northern parts of the North Coastal Area and the upper Sacramento and Napa Rivers. A summary of runoff in representative streams is shown in Table 4, page 8. Forecasts of runoff in California streams are set forth in Tables 5, 6, 7, and 8 of Appendix A.

Subnormal runoff has provided inadequate replenishment to ground water basins except in the extreme northerly portions of the State. Prior to March 1, abnormally high temperatures resulted in pre-season pumping for irrigation in many areas. This unseasonal draft on ground water storage was reduced by heavy precipitation during March. In general, the water levels in ground water basins dependent entirely on natural recharge may be expected to be lower at the end of the 1954 irrigation season than in the fall of 1953.

The U. S. Weather Bureau's 30-day outlook for California for the month of April calls for above normal precipitation and below normal temperatures. The Bureau points out that the outlook given here is not a specific forecast in the usual meteorological sense, but is an estimate of the average precipitation and temperature for the month based upon the best indications now available. For more specific predictions, reference should be made to the local forecasts published by the nearest Weather Bureau office.

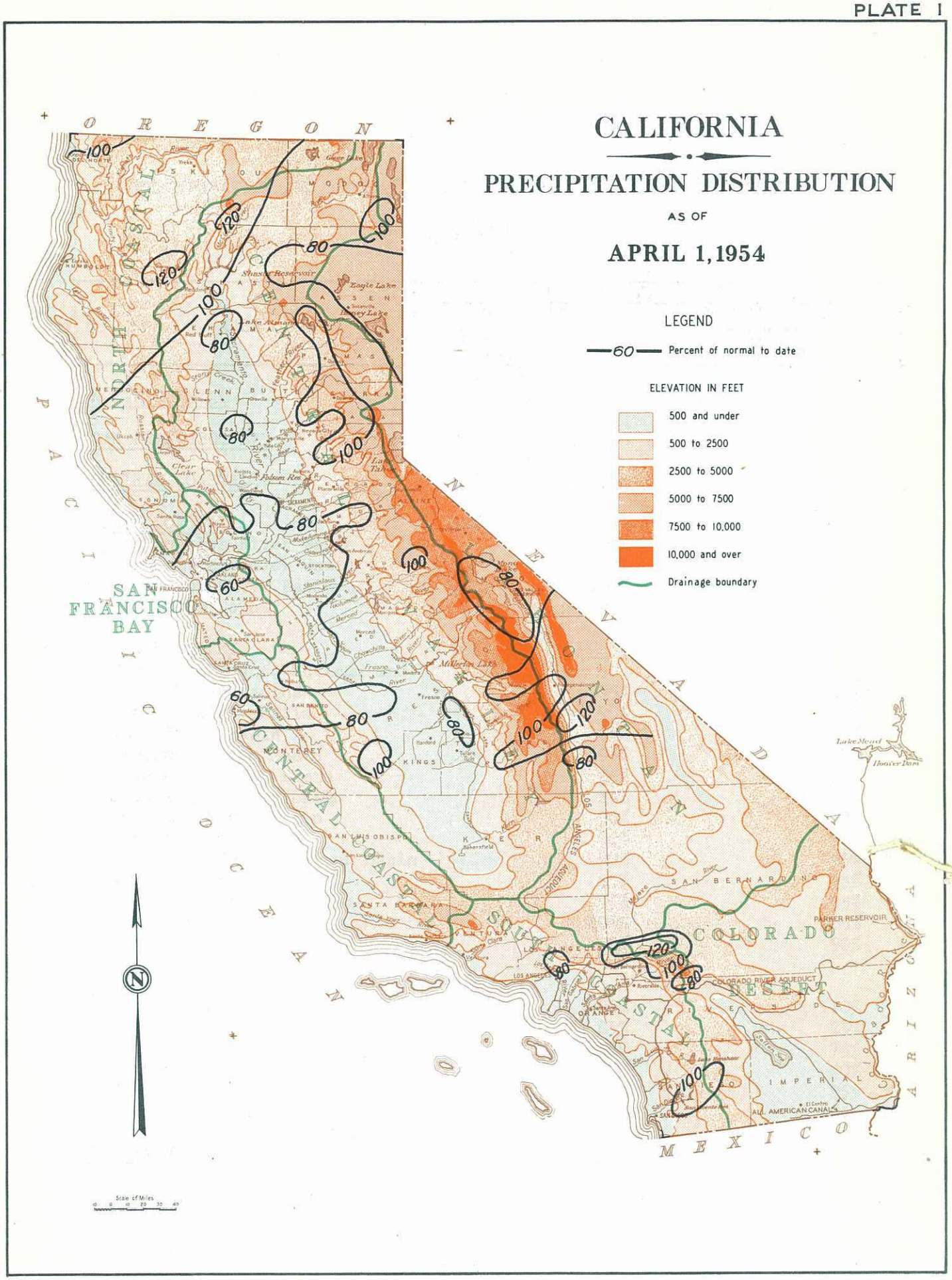

CALIFORNIA
PRECIPITATION DISTRIBUTION
AS OF
APRIL 1, 1954
LEGEND
60 Percent of normal to date
ELEVATION IN FEET
500 and under
500 to 2500
2500 to 5000
5000 to 7500
7500 to 10,000
10,000 and over
Drainage boundary
OREGON
NEVADA
ARIZONA
MEXICO
PACIFIC OCEAN
SAN FRANCISCO BAY
NORTH COASTAL
CENTRAL COASTAL
SOUTH COASTAL
COLORADO DESERT
Shasta Res.
Eagle Lake
Lake Almanor
Clear Lake
Folsom Res.
Millerton Lake
Lake Mead
Hoover Dam
PARKER RESERVOIR
COLORADO RIVER AQUEDUCT
ALL AMERICAN CANAL
Scale of Miles

TABLE 2

SNOWPACK DATA AT REPRESENTATIVE COURSES

As of April 1, 1954

Watershed and Snow Course	Elevation Feet	Date	Snow Depth Inches	Water Content Inches	April 1 Normal 1/	Corresponding Water Content 1953
Sacramento and Klamath						
Mt. Shasta	8,000	4/3/54	140.5	57.5	52.6	55.1
Pit						
Cedar Pass	7,200	3/30/54	41.7	14.6	19.9	16.6
Feather						
Letterbox	5,600	4/1/54	111.1	53.1	54.3	60.0
Yuba and Truckee						
Donner Summit	7,020	3/26/54	85.0	34.6	44.3	39.3
American and Lake Tahoe						
Echo Summit	7,500	4/1/54	82.8	30.8	43.4	34.7
Mokelumne and Carson						
Carson Pass	8,600	3/31/54	79.3	32.0	40.4	32.3
Stanislaus and Walker						
Sonora Pass	8,800	3/30/54	61.8	22.0	32.4	20.9
Tuolumne and Mono						
Dana Meadows	9,700	3/29/54	82.4	28.4	44.8	24.2
Merced						
Snow Flat	8,700	3/30/54	118.8	38.8	45.2	35.0
Upper San Joaquin and Owens						
Mammoth Pass	9,500	3/31/54	119.3	42.3	40.6	34.1
Kings						
Bishop Pass	11,400	3/26/54	93.9	32.5	29.6	24.4
Kaweah						
Giant Forest	6,500	3/28/54	57.1	19.0	18.7	11.9
Tule						
Quaking Aspen	7,000	3/29/54	50.9	18.1	16.8	6.4
Kern						
Quinn Ranger Station	8,000	3/31/54	58.3	21.5	27.2	16.4

1/ Computed for the 50-year period 1900-01 to 1949-50, inclusive.

TABLE 3

SUMMARY OF STORAGE
IN MAJOR RESERVOIRS

Area	Number of Reported Reservoirs	Total Capacity	Water in Storage: Acre-Feet: April 1 1953	Water in Storage: Acre-Feet: October 1 1953 2/	Water in Storage: Acre-Feet: April 1 1954	Water in Storage: Per Cent of Capacity: April 1 1954	Number of Reservoirs In Operation 10 Years	Water in Storage 1/: 10-Year April 1 Mean Per Cent of Capacity	Water in Storage 1/: April 1, 1954 Per Cent of 10-Year Mean
Intrastate									
North Coastal	2	126,720	105,500	53,840	104,260	82%	2	83%	99%
San Francisco Bay	11	432,380	369,870	306,350	311,940	72%	7	73%	102%
Central Coastal	3	247,000	47,060	27,860	46,200	19%	2	56%	114%
South Coastal	19	928,090	314,826	254,740	288,780	31%	17	53%	62%
Central Valley	30	9,151,840	5,750,650	5,439,410	5,992,750	65%	26	56%	105%
Lahontan Area	7	347,870	260,097	244,280	238,600	69%	7	66%	104%
Sub-total		11,233,900	6,848,003	6,326,480	6,982,530	63%	61	58%	97%
Interstate									
North Coastal	3	1,132,320	810,100	569,660	839,800	74%	3	56%	132%
Lahontan Area	3	815,500	601,074	664,270	629,190	77%	3	57%	135%
Colorado Desert 3/	1	27,207,000	17,764,000	18,384,000	15,701,000	58%	1	65%	89%
Sub-total		29,154,890	19,175,174	19,617,930	17,169,990	59%	7	64%	92%
Total	79	40,388,790	26,023,177	25,944,410	24,152,520	60%	68	53%	94%

1/ Computed for reservoirs in operation 10 years or longer.
2/ Basic data in Table 9 of February 1, 1954, Water Conditions Report.
3/ Data for Lake Mead which regulates flow of the Lower Colorado River, the major source of water for the Colorado Desert Area.

TABLE 4

UNIMPAIRED RUNOFF[1] OF REPRESENTATIVE CALIFORNIA STREAMS

October 1, 1953, to March 31, 1954

Area, Stream, and Station	Acre-Feet		Per Cent Normal
	Computed Unimpaired Runoff	Normal[2]	
NORTH COASTAL AREA			
Klamath River at Somesbar	5,270,120	3,071,660	172%
Russian River at Guerneville	1,054,470	1,155,590	91%
SAN FRANCISCO BAY AREA			
Napa River near St. Helena	48,720	43,530	112%
Coyote Creek near Madrone	4,600	47,330	10%
CENTRAL COASTAL AREA			
Arroyo Seco near Soledad	31,220	101,640	31%
Huasna River near Santa Maria	3,090	17,240	18%
SOUTH COASTAL AREA			
Sespe Creek near Fillmore	23,450	66,170	35%
Arroyo Seco near Pasadena	2,160	5,680	38%
Santa Ana River near Mentone	24,220	46,390	52%
CENTRAL VALLEY AREA			
Sacramento near Red Bluff	5,824,260	5,158,800	113%
San Joaquin below Friant	268,440	411,630	65%
LAHONTAN AREA			
Truckee River at Farad	217,720	286,000	76%
Owens River near Round Valley	62,780	66,220	95%
COLORADO DESERT AREA			
Colorado River near Grand Canyon[3]	2,219,400	2,811,700[4]	79%

1/ Corrected for upstream regulation.
2/ Computed for the 50-year period 1900-01 to 1949-50, inclusive.
3/ Uncorrected for upstream regulation.
4/ Computed for the 30-year period 1922-23 to 1951-52, inclusive.

SECTION 2 - PRECIPITATION

Precipitation during March was above normal in most areas of the State. Exceptions to that condition were observed at scattered locations along the Pacific Coast north of San Francisco and of the Sierra Nevada. Precipitation records for the period July 1, 1953, to March 31, 1954, are presented in Table 5. Seasonal distribution of precipitation as of April 1 among the drainage areas delineated on the Frontispiece, is as follows:

North Coastal Area

Seasonal precipitation in this area averaged about 105 per cent of normal, varying from 92 per cent at Santa Rosa to 129 per cent at Weaverville. Rainfall during the month of March varied from 57 per cent of normal at Crescent City to 142 per cent at Weaverville.

San Francisco Bay Area

Seasonal precipitation in this area averaged about 70 per cent of normal, varying from 51 per cent at Oakland to 78 per cent at San Jose. During the month of March, precipitation amounted to 82 per cent of normal at Oakland and 150 per cent of normal at San Francisco.

Central Coastal Area

Seasonal precipitation in this area averaged about 80 per cent of normal, varying from 71 per cent at Salinas to 97 per cent at King City. During March, precipitation varied from 112 per cent of normal at Santa Barbara to 176 per cent at King City.

South Coastal Area

Seasonal precipitation in this area averaged about 95 per cent of normal, varying from 72 per cent of normal at Los Angeles to 127 per cent at Table Mountain Observatory in eastern Los Angeles County. Precipitation during March varied from approximately normal to over two and one-half

times that amount. Los Angeles reported 111 per cent of normal, San Bernardino 161 per cent and San Diego 258 per cent.

Central Valley Area

Seasonal precipitation in this area averaged about 90 per cent of normal, varying from 124 per cent of normal at McCloud in the upper Sacramento River Basin to 66 per cent at Stockton. Average precipitation on this area during March was considerably above normal. The reported range of variation was from 76 per cent of normal at Mt. Shasta to 184 per cent at Lake Eleanor on the Tuolumne River watershed.

Lahontan Area

Seasonal precipitation in this area averaged about 90 per cent of normal, varying from 61 per cent of normal at Susanville to 136 per cent at Cottonwood Gates southwest of Lone Pine in the Owens River Basin. March precipitation varied widely with extremes of 32 per cent of normal recorded at the Los Angeles aqueduct intake in Owens Valley and over 150 per cent reported from Lake Sabrina in the Owens River Basin, and at Jess Valley in Modoc County.

Colorado Desert Area

No precipitation records were received from this area.

SECTION 3 - SNOWPACK

The water content of the California snowpack on April 1 as determined from snow course measurements is below normal except on the Klamath, upper Sacramento, Feather, Susan and Owens River watersheds. These data are presented in Table 9 and snow depth information obtained by aerial photographic methods at selected locations are set forth in Table 11. Snowpack conditions among the drainage areas of the State delineated on the Frontispiece, are as follows:

North Coastal Area

Snowmelt runoff in this area is of importance only on the Klamath River and its tributaries, the Shasta, Scott, Salmon and Trinity Rivers. That system drains a large area in California and south-central Oregon. The Soil Conservation Service, Oregon Experiment Station and Cooperators advise that the water content of the snowpack for the upper Klamath River basin is 109 per cent of normal for April 1. Snow surveys made at a few courses in California indicate that the water content of the snowpack is about the same as one year ago or about 110 per cent of the normal for April 1. The snow line is at an elevation of about 4,500 feet.

San Francisco Bay Area

Snow occurs infrequently in this area and has no bearing on distribution of runoff or general water conditions.

Central Coastal Area

Snow occurs infrequently in this area and has no bearing on distribution of runoff or general water conditions.

South Coastal Area

Snow accumulating on the high elevations of the watershed of streams having their source in the San Gabriel and San Bernardino Mountains influences spring runoff during some years. Snow surveys made on April 1 at three courses showed between 34 and 40 inches of water content at the 7,000 to 8,000-foot zone of elevation.

Central Valley Area

The water content of the snowpack on April 1 averaged about 15 per cent below normal on the west slope of the Sierra Nevada between the Feather and upper San Joaquin River watersheds and is approximately normal on the remainder of the Sierra Nevada and Cascade Mountains. In comparison with conditions of one year ago the water content of the snowpack is greater on the area south of the Stanislaus River watershed and slightly less for the remainder of the Sierra Nevada.

Warm type storms occurred over the area on March 8 and 10 and were followed by a series of cold type storms between March 16 and the end of the month. These storms added materially to the water content of the snowpack, particularly in the southern Sierra Nevada. With normal precipitation during the remainder of the season, the snowmelt runoff for all Sierra Nevada streams tributary to San Joaquin Valley will exceed that of 1953. On April 1 the snow line was at an elevation of 4,000 feet at Mt. Shasta, 5,500 feet near Donner Summit and 6,000 feet in Kern County.

Lahontan Area

The water content of the snowpack on April 1 averaged only about 75 per cent of normal in the Truckee River and Tahoe Basins and is less than that of one year ago. In the Walker and Carson River Basins it is 75 to 80 per cent of normal and averages slightly more than on the same date last year. In Susan and Owens River Basins the water content is above normal and nearly twice that of a year ago. With normal precipitation during the remainder of the season, normal runoff may be expected only in the Owens and Susan Rivers.

Colorado River Desert Area

Snow which has accumulated on the higher elevations of the watersheds of streams having their source in the San Jacinto Mountains will have considerable influence on runoff during 1954. No snow surveys are made in this area.

SECTION 4 - SURFACE RESERVOIR STORAGE

There are about 220 conservation reservoirs with individual capacities in excess of 1,000 acre-feet and an aggregate usable storage capacity of 40,750,000 acre-feet which impound water for beneficial uses within California or jointly with adjacent states. Reports are received monthly from the operators of 79 of these reservoirs representing 99 per cent of the total usable capacity. A summary of the water in storage on April 1 in these reservoirs is set forth in Table 3, page 7. On April 1 these reservoirs had in storage about 60 per cent of their total capacity. Intrastate reservoirs in operation for 10 or more years have in storage 97 per cent of their 10-year average as of April 1.

North Coastal Area

Five storage reservoirs, including three on the Klamath River in the State of Oregon, located on streams tributary to this area, have in storage about 75 per cent of the total capacity of 1,259,000 acre-feet, which represents about 127 per cent of the 10-year mean as of April 1. Storage in these reservoirs has increased about 320,000 acre-feet since October 1, 1953. The reservoirs in California on Shasta and Eel Rivers have in storage about 99 per cent of their 10-year mean and will probably fill to capacity during the spring runoff period.

San Francisco Bay Area

Eleven storage reservoirs located on streams tributary to San Francisco Bay, for which reports have been received, have in storage about 72 per cent of their total capacity of 432,400 acre-feet. Seven of these reservoirs, in operation for more than 10 years, have in storage 102 per cent of their 10-year mean as of April 1. Precipitation in excess of normal during the remainder of the season will be required to fill the reservoirs in this area. A portion of the water in storage has been imported

from Sierra Nevada streams. Storage in these reservoirs has increased by 5,600 acre-feet since October 1, 1953.

Central Coastal Area

Three reservoirs located in this area have in storage about 19 per cent of their total capacity of 247,000 acre-feet. Two of these reservoirs, in operation for more than 10 years, have in storage 114 per cent of their 10-year mean as of April 1. These reservoirs are not expected to fill during the 1953-54 season. Storage has increased by 18,300 acre-feet since October 1, 1953.

South Coastal Area

Nineteen reservoirs in this area, for which reports have been received, have in storage about 31 per cent of their aggregate capacity of 928,000 acre-feet. Seventeen of these reservoirs, in operation for more than 10 years, have in storage about 62 per cent of their 10-year mean as of April 1. Total storage has decreased by 34,000 acre-feet since October 1, 1953. These reservoirs are not expected to fill to their 10-year mean storage. A portion of the water in storage has been imported from Colorado River.

Central Valley Area

Thirty reservoirs in this area, for which reports are received, have in storage 65 per cent of their aggregate storage capacity of 9,152,000 acre-feet. Twenty-six of these reservoirs, in operation for more than 10 years, have in storage about 105 per cent of their 10-year mean as of April 1. All reservoirs in the area are expected to fill during the snowmelt period. Storage in the 30 reservoirs has increased by 553,000 acre-feet since October 1, 1953.

Lahontan Area

Ten Reservoirs in this area, for which reports are received, have in storage about 74 per cent of their total capacity of 1,163,000 acre-feet,

which represents about 124 per cent of their 10-year mean as of April 1. The water surface elevation at Lake Tahoe was 6,227.85 feet on April 1 as compared with 6,227.60 feet one year ago. These reservoirs in the aggregate are not expected to fill to capacity, but should have storage equal to, or greater than, their 10-year mean by the end of the snowmelt period. Storage in these reservoirs has decreased by 40,700 acre-feet since October 1, 1953. Intrastate reservoirs of this area have in storage 104 per cent of their 10-year mean as of April 1.

The snow survey committee for the Truckee River Basin with representatives from the Washoe County Conservation District, Truckee-Carson Irrigation District, and Sierra Pacific Power Company forecast that the maximum water surface elevation of Lake Tahoe will be 6,228.90 feet and that Boca, Independence and Donner Lake Reservoirs will fill to capacity during the snowmelt period under the assumption that normal precipitation will occur during the remainder of the season.

Colorado Desert Area

The U. S. Bureau of Reclamation, Region 3, Boulder City, Nevada, advises that the storage in Lake Mead on April 1 was 15,701,000 acre-feet, which is 89 per cent of average for the last 10 years and 58 per cent of total capacity. Storage in Lake Mead has decreased by 2,683,000 acre-feet since October 1, 1953.

SECTION 5 - STREAM FLOW

Runoff of California streams during the first six months of the 1953-54 season has been considerably below normal in all parts of the State except in the northern portion of the North Coastal Area and the upper Sacramento and Napa Rivers. Forecasts of runoff hereinafter set forth are predicated upon the assumption that normal precipitation will occur during the remainder of the season. If above normal conditions prevail, as indicated by the 30-day weather outlook, runoff in excess of that forecasted may be anticipated. Runoff data for representative California streams are set forth in Table 13. A summary of stream flow in each of the drainage areas delineated on the Frontispiece is as follows:

North Coastal Area

Runoff of most streams in the northern portion of this area has been in excess of normal during the first six months of the 1953-54 season. The computed natural runoff of the Klamath River at Somesbar during that period was 172 per cent of normal and for the Russian River at Guerneville 91 per cent of normal.

The Soil Conservation Service, Oregon Experiment Station and cooperators have forecast that April-July runoff into Upper Klamath Lake will total 560,000 acre-feet if average precipitation occurs during the remainder of the season. This estimated quantity of runoff is 144 per cent of the average for the 1942-51 period.

Data from snow surveys made on the watersheds of Klamath River tributaries in California indicate that snowmelt runoff will be in excess of normal if average precipitation occurs during the remainder of the season.

San Francisco Bay Area

During the first six months of the 1953-54 season the runoff of Napa River near St. Helena was 112 per cent of normal. Runoff on streams tributary to the southern portion of San Francisco Bay has been negligible.

Central Coastal Area

Runoff of streams in this area was generally below normal during the first six months of the 1953-54 season. Runoff during that period has been only 18 per cent of normal in Huasna River near Santa Maria and 31 per cent of normal in the Arroyo Seco near Soledad.

South Coastal Area

Runoff on streams in the northern portion of this area during the first six months of the 1953-54 season varied from about 35 per cent of normal for Sespe Creek near Fillmore to 52 per cent for the Santa Ana River. No reports were received on runoff in streams in San Diego County. About 22,000 acre-feet of runoff from Piru Creek, Santa Clara River, Arroyo Seco, Eaton Wash, Tujunga Wash, Santa Anita Wash, Santa Ana River and San Jacinto River have been conserved by spreading on absorptive areas.

Central Valley Area

Runoff from streams of this area during the first six months of the 1953-54 season varied widely from 45 per cent of normal on the Kern River near Bakersfield to 113 per cent of normal on the Sacramento River above Red Bluff.

Runoff into the Sacramento Valley during March storms produced moderate stages within the Sacramento River Flood Control Project and resulted in flows over all Project weirs except Sacramento Weir.

Forecasts of snowmelt runoff during the months of April through July in streams in this area, with the assumption of normal precipitation during the remainder of the season are set forth in the following tabulation:

April 1, 1954

Watershed and Station	April 1 - July 31, 1954	
	50-Year Normal (1901-1950) Acre-Feet	Unimpaired Runoff Assuming Normal Precipitation for April-June, 1954 Acre-Feet
Sacramento at Shasta Dam 1/	1,944,000	2,000,000
Feather at Oroville	2,056,000	1,900,000
Yuba at Smartville	1,169,000	1,000,000
American at Fair Oaks	1,463,000	1,050,000
Mokelumne at Mokelumne Hill	513,000	400,000
Stanislaus at Melones Dam	785,000	620,000
Tuolumne at La Grange	1,286,000	1,050,000
Merced at Exchequer	667,000	550,000
San Joaquin at Friant	1,300,000	1,130,000
Kings at Piedra	1,269,000	1,100,000
Kaweah at Three Rivers 1/	282,000	250,000
Tule at Porterville	50,000	45,000
Kern at Bakersfield 1/	468,000	400,000

1/ Not corrected for upstream impairments.

Lahontan Area

The runoff of streams in this area during the first six months of the 1953-54 season was generally below normal. Runoffs for Truckee River at Farad and Owens River near Round Valley were 76 and 95 per cent of normal, respectively. Normal precipitation during the remainder of the season will produce near normal runoff on the Susan and Owens Rivers.

The snow survey committee for the Truckee River Basin with representatives from the Washoe County Water Conservation District, Truckee-Carson Irrigation District, and Sierra Pacific Power Company have forecast that the natural flow of the Truckee River at Farad, assuming normal precipitation for the remainder of the season, will amount to about 205,000 acre-feet after April 1 exclusive of runoff originating above Lake Tahoe, as compared to an average flow of 281,000 acre-feet and the Little Truckee River at Boca will amount to about 69,000 acre-feet or 73 per cent of normal.

The Nevada Cooperative Snow Survey office forecasts that, assuming normal precipitation for the remainder of the season, the runoff of Carson and Walker Rivers will be as follows:

Stream and Station	Forecast of Snowmelt Runoff in Acre-Feet	Per cent of Normal Runoff
East Walker River near Bridgeport	55,000	79
West Walker River near Coleville	140,000	81
West Carson River at Woodfords	50,000	78
Carson River at Fort Churchill	145,000	76

The City of Los Angeles, Department of Water and Power, forecasts that, assuming normal precipitation conditions, the April-July runoff of the Owens River above Lake Crowley will be 67,900 acre-feet which is 95 per cent of normal.

Colorado Desert Area

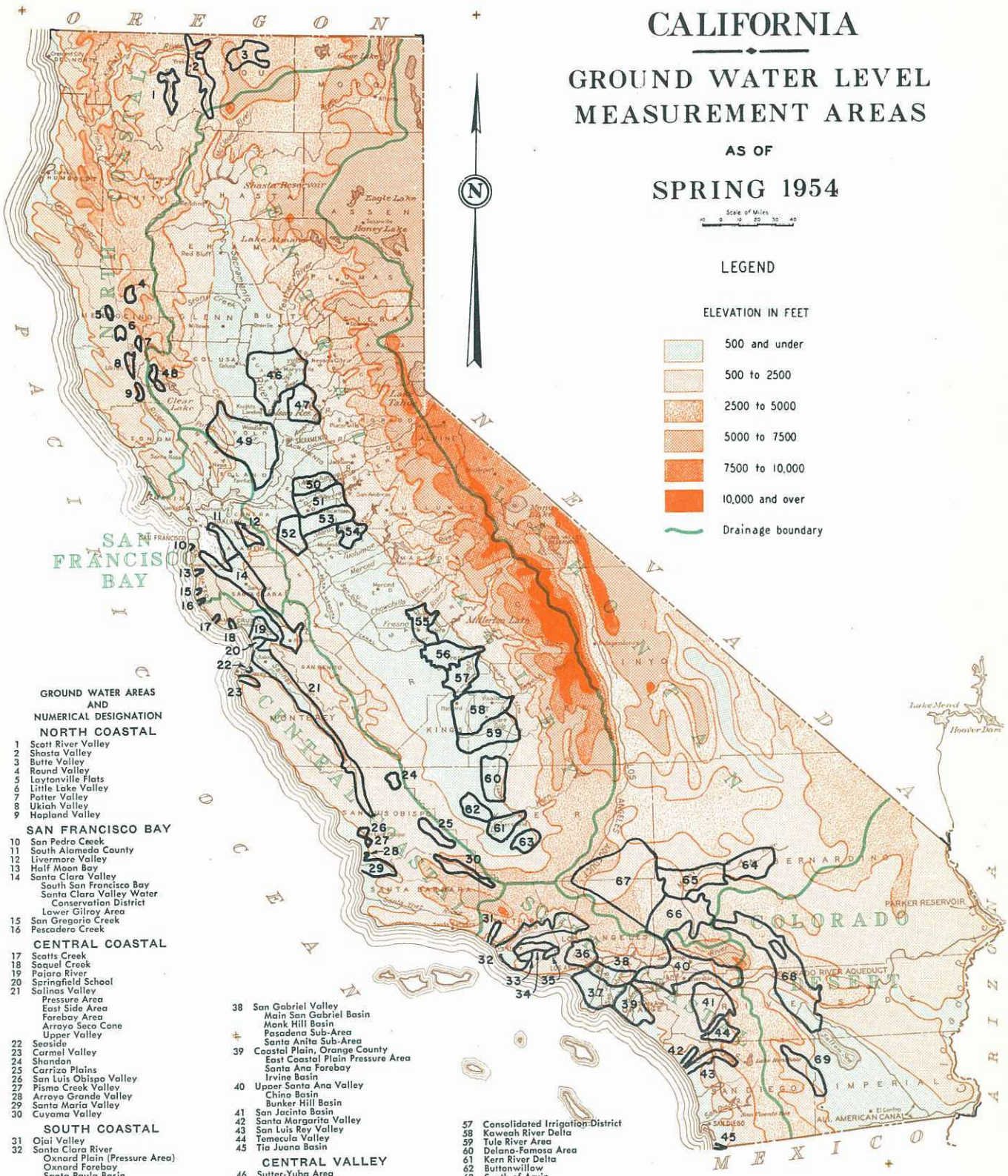
The U. S. Bureau of Reclamation, Region 3, Boulder City, Nevada, advises that the runoff of Colorado River near Grand Canyon between October 1, 1953, and March 31, 1954, has been 2,219,400 acre-feet, which is 79 per cent of the mean flow for the 30-year period, 1923 through 1952. On April 1, that organization forecast that April-July runoff of the Colorado River near Grand Canyon will be approximately 7,200,000 acre-feet and 82 per cent of the 30-year mean runoff, provided near normal climatic conditions occur during the remainder of the season.

CALIFORNIA

GROUND WATER LEVEL MEASUREMENT AREAS

AS OF

SPRING 1954



GROUND WATER AREAS AND NUMERICAL DESIGNATION

NORTH COASTAL

1 Scott River Valley
2 Shasta Valley
3 Butte Valley
4 Round Valley
5 Laytonville Flats
6 Little Lake Valley
7 Potter Valley
8 Ukiah Valley
9 Hopland Valley

SAN FRANCISCO BAY

10 San Pedro Creek
11 South Alameda County
12 Livermore Valley
13 Half Moon Bay
14 Santa Clara Valley
South San Francisco Bay
Santa Clara Valley Water Conservation District
Lower Gilroy Area
15 San Gregorio Creek
16 Pescadero Creek

CENTRAL COASTAL

17 Scotts Creek
18 Soquel Creek
19 Pajaro River
20 Springfield School
21 Salinas Valley
Pressure Area
East Side Area
Forebay Area
Arroyo Seco Cone
Upper Valley
22 Seaside
23 Carmel Valley
24 Shandon
25 Carrizo Plains
26 San Luis Obispo Valley
27 Pismo Creek Valley
28 Arroyo Grande Valley
29 Santa Maria Valley
30 Cuyama Valley

SOUTH COASTAL

31 Ojai Valley
32 Santa Clara River
Oxnard Plain (Pressure Area)
Oxnard Forebay
Santa Paula Basin
Fillmore Basin
Piru Basin
33 Pleasant Valley
34 Las Posas Valley
35 Simi Valley
36 San Fernando Valley
37 Coastal Plain, Los Angeles County
West Coast Basin
Central Coastal Pressure Area
Los Angeles Forebay Area
Montebello Forebay Area
38 San Gabriel Valley
Main San Gabriel Basin
Monk Hill Basin
Pasadena Sub-Area
Santa Anita Sub-Area
39 Coastal Plain, Orange County
East Coastal Plain Pressure Area
Santa Ana Forebay
Irvine Basin
40 Upper Santa Ana Valley
Chino Basin
Bunker Hill Basin
41 San Jacinto Basin
42 Santa Margarita Valley
43 San Luis Rey Valley
44 Temecula Valley
45 Tia Juana Basin

CENTRAL VALLEY

46 Sutter-Yuba Area
47 Placer County
48 Putah Creek Cone
Capay Valley
49 Lake County
50 Mokelumne River
51 Calaveras River
52 Tracy Area
53 Farmington-Collegeville Area
54 Oakdale Irrigation District
55 Madera Irrigation District
56 Fresno Irrigation District
57 Consolidated Irrigation District
58 Kaweah River Delta
59 Tule River Area
60 Delano-Famosa Area
61 Kern River Delta
62 Buttonwillow
63 South of Arvin

LAHONTAN

64 Lower Mojave River Valley
65 Middle Mojave River Valley
66 Upper Mojave River Valley
67 Antelope Valley

COLORADO RIVER

68 Coachella Valley
69 Borrego Valley

SECTION 6 - GROUND WATER

Measurements of wells in 86 ground water storage units throughout California during March 1954, show ground water levels lower than the spring of 1953 in 49 units, higher in 27 units, and unchanged in two units. Antecedent data are not available for eight units. Lowering in ground water levels is generally prevalent in many important units of the San Francisco Bay, Central Valley, South Coastal and Lahontan Areas. A general rise in ground water levels was reported in important units of the Central Coastal Area and at a few locations in the San Francisco Bay, South Coastal and Central Valley Areas. Recharge of ground water units in some localities resulting from precipitation and runoff during March is not reflected in the measurements. Draft in many ground water units was reduced through curtailment of pre-season pumping during March storms. Predicated on estimated recharge and average conditions of draft, ground water levels in the fall of 1954 will in general be below those of 1953. Basic data are presented in Table 14 of Appendix B.

Ground water conditions for specific ground water units, delineated on the map following page 19, among the drainage areas of the State are as follows:

North Coastal

Water levels of the ground water units in this area for which reports were received are generally the same as one year ago. Slightly higher water tables were noted in Scott, Shasta, Butte, and Hopland Valleys, and minor lowering was observed in Round, Potter, and Ukian Valleys as compared with the conditions in the spring of 1953.

San Francisco Bay

Ground water levels for most units of this area are substantially below those of the spring of 1953. Precipitation and releases from

reservoirs during March resulted in some replenishment of ground water storage not reflected by the spring of 1954 measurements. Pre-season pumping for agricultural use was curtailed during the March storms.

Spring 1954 ground water levels are lower than those of one year ago by amounts ranging from one to eleven feet in units of south Alameda County, Livermore Valley, San Gregorio Creek, Half Moon Bay and the central portion of Santa Clara and from one to fifteen feet higher in the South San Francisco Bay and Gilroy sub-units of Santa Clara Valley, San Pedro Creek and Pescadero Creek.

Central Coastal

Ground water levels are from one to six feet higher than one year ago in all units of this area except the Springfield School unit where an average lowering of about seven feet was recorded. Little change is indicated in the advance of sea water intrusion into the 180-foot and 400-foot aquifer of the Salinas Valley pressure zone.

South Coastal

Ground water levels for this area are generally lower than in the spring of 1953. This condition can be attributed partially to record high February temperatures, which resulted in substantial unseasonal use of ground water. Heavy precipitation during March resulted in a general replenishment of ground water storage throughout the South Coastal Area which is not reflected in the spring water level measurements. The greatest lowering of ground water levels was observed in the Ojai, Oxnard Forebay, and Piru Basins of Ventura County, and in the Main San Gabriel and Montebello Forebay Basins of Los Angeles County. An exception to the general lowering of ground water levels was observed in Pleasant Valley Basin of Ventura County where a substantial rise was noted.

A total of 22,000 acre-feet of surface water was added to the ground water through spreading grounds. Ground water storage units which have benefited from spreading operations include Ojai Valley, Santa Clara River Valley, San Gabriel Valley, upper Santa Ana Valley and San Jacinto Basin.

Ground water levels in portions of the Oxnard Plain (pressure area), Pleasant Valley, Central Coastal Plain (pressure area), West Coast Basin, Santa Ana Forebay, East Coastal Plain (pressure area), and San Luis Rey Valley, range from sea level to 90 feet below. All levels in Tia Juana Basin are now above sea level.

Intrusion of sea water into the East Coastal Plain (pressure area) is continuing along the coast line with the greatest inland advance being noted in the Talbert zone in the Santa Ana Gap. Sea water is continuing to intrude into the West Coast Basin from Santa Monica Bay. The lowest observed pressure level is now about two miles northeast of Wilmington.

Central Valley

Water levels in the Central Valley are from about one to eight feet lower than in the spring of 1953 in all major units except in the Lake County, Kaweah River Delta and Tule River units where rises from one to three feet were recorded. Pre-season pumping has occurred in all units except Lake County, but was curtailed during the March storms. Ground water levels in most areas are rising slowing but will probably not reach levels attained in the spring of 1953.

Ground water levels have been lowered locally in the vicinity of Wheatland and Lincoln by increased pumping for irrigation. The rise in water levels in the Kaweah River Delta and Tule River units has resulted primarily through reduction of draft on ground water and extensive use of imported surface supplies.

Lahontan

Continued increase in irrigation in this area, particularly in the Antelope and Mojave River Valleys, together with subnormal replenishment has caused a general lowering of the ground water levels. Increased winter irrigation occasioned by the unseasonably high temperatures accelerated this lowering. No data are available for other ground water units in this area.

Colorado Desert

Observations of ground water levels in this area were limited to Coachella and Borrego Valleys. The net changes during the past year were a rise of about two feet in Coachella Valley and a lowering of about three and one-half feet in Borrego Valley. The rise in Coachella Valley has probably resulted from increased utilization of Colorado River water.

APPENDIX A

RUNOFF FORECASTS

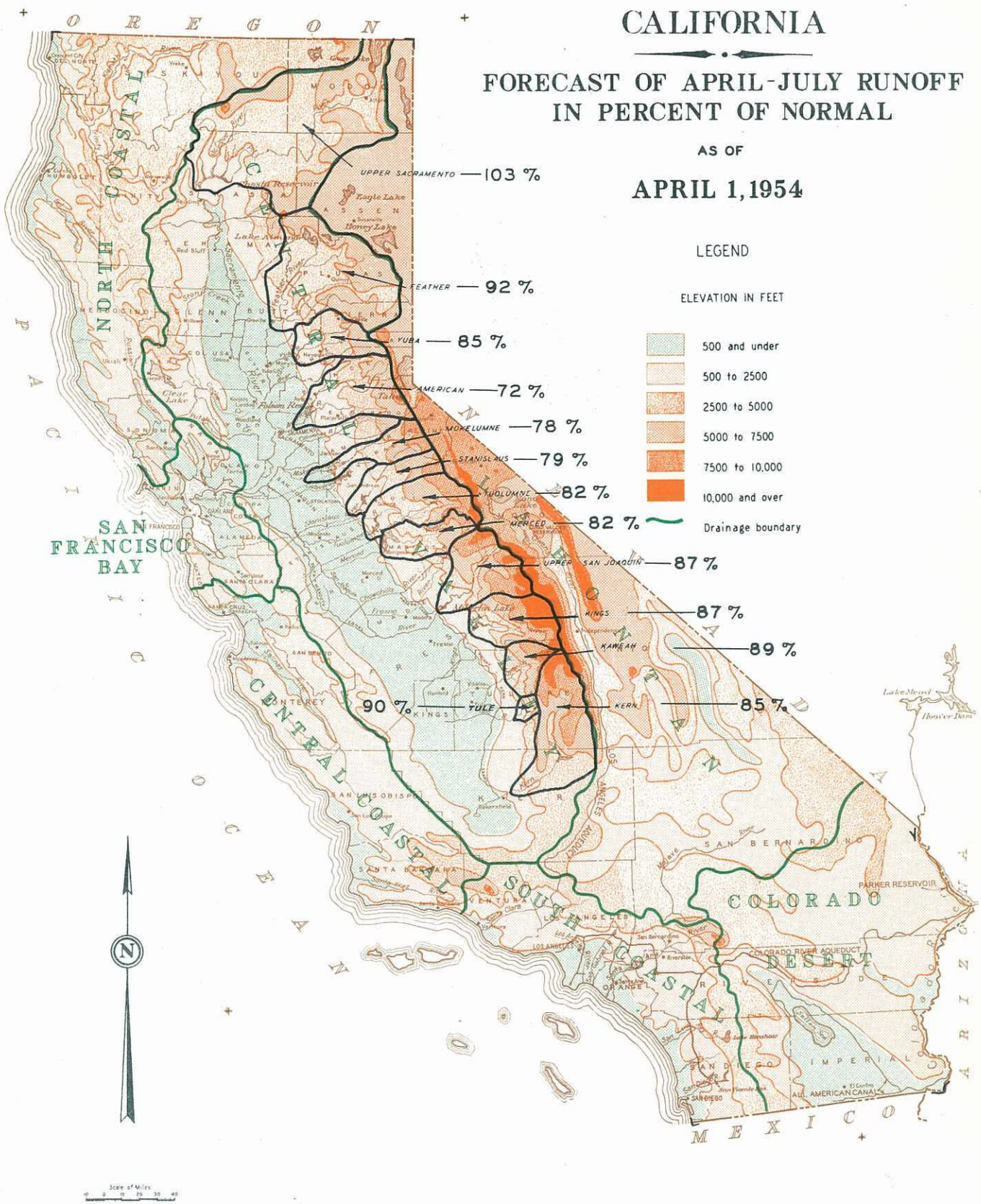

CALIFORNIA
FORECAST OF APRIL-JULY RUNOFF
IN PERCENT OF NORMAL
AS OF
APRIL 1, 1954
LEGEND
ELEVATION IN FEET
500 and under
500 to 2500
2500 to 5000
5000 to 7500
7500 to 10,000
10,000 and over
Drainage boundary
UPPER SACRAMENTO — 103 %
FEATHER — 92 %
YUBA — 85 %
AMERICAN — 72 %
MOKELUMNE — 78 %
STANISLAUS — 79 %
TUOLUMNE — 82 %
MERCED — 82 %
UPPER SAN JOAQUIN — 87 %
KINGS — 87 %
KAWEAH — 89 %
TULE — 90 %
KERN — 85 %
OREGON
NORTH COASTAL
SAN FRANCISCO BAY
CENTRAL COASTAL
SOUTH COASTAL
COLORADO DESERT
PACIFIC OCEAN
MEXICO
ARIZONA
NEVADA
PARKER RESERVOIR
COLORADO RIVER AQUEDUCT
ALL AMERICAN CANAL
Lake Mead
Hoover Dam
Scale of Miles

TABLE 5

UNIMPAIRED RUNOFF[1] FORECASTS

April 1, 1954

Area, Stream, and Station	Source of Forecast[2]	April 1-July 31, Inc. 1954 Forecast Acre-Feet	50-Year Normal 1901-1950 Acre-Feet	1954 Forecast Per Cent of Normal
NORTH COASTAL				
Upper Klamath Lake, Net Inflow[3]	O.C.S.S.	560,000	388,800[8]	144%
Shasta Riv. above Yreka Ditch	D.W.R.	18,000	[9]	-
Trinity Riv. at Lewiston[3]	D.W.R.	725,000	[9]	-
CENTRAL VALLEY				
S. F. Pit Riv. nr. Likely	D.W.R.	40,000	38,000	105%
Sacramento Riv. at Shasta Dam[3]	D.W.R.	2,000,000	1,944,000	103%
N. F. Feather Riv. nr. Prattville	D.W.R.	265,000[6]	278,000[6]	95%
M. F. Feather Riv. nr. Clio[3]	D.W.R.	85,000	95,000	89%
M. F. Feather Riv. at Bidwell Bar	D.W.R.	650,000	693,000	94%
S. F. Feather Riv. at Enterprise	D.W.R.	115,000	122,000	94%
Feather Riv. nr. Oroville	D.W.R.	1,900,000	2,056,000	92%
N. Yuba Riv. below Goodyears Bar	D.W.R.	260,000	305,000	85%
Bowman Area-M. Yuba Riv. & Canyon Creek	D.W.R.	100,000	120,000	83%
S. F. Yuba Riv. at Langs Crossing	D.W.R.	220,000	236,000	93%
Yuba Riv. nr. Smartville	D.W.R.	1,000,000	1,169,000	85%
N. F. American Riv. at Colfax	D.W.R.	200,000	290,000	69%
M. F. American Riv. nr. Auburn	D.W.R.	440,000	610,000	72%
Silver Creek nr. Placerville	D.W.R.	150,000	205,000	73%
American Riv. at Fair Oaks	D.W.R.	1,050,000	1,463,000	72%
N. F. Mokelumne Riv. nr. West Point	D.W.R.	370,000	445,000	83%
Mokelumne Riv. nr. Mokelumne Hill	D.W.R.	400,000	513,000	78%
M. F. Stanislaus Riv. at Sand Bar Flat nr. Avery	D.W.R.	300,000	367,000	82%
Stanislaus Riv. below Melones P. H.	D.W.R.	620,000	785,000	79%
Tuolumne Riv. nr. Hetch Hetchy	D.W.R.	525,000	642,000	82%
Tuolumne Riv. above La Grange Dam	D.W.R.	1,050,000	1,286,000	82%
Merced Riv. at Pohono Bridge	D.W.R.	325,000	395,000	82%
Merced Riv. at Exchequer	D.W.R.	550,000	667,000	82%
S. F. San Joaquin Riv. nr. Florence Lake	D.W.R.	180,000	205,000	88%
Big Creek at Huntington Lake	D.W.R.	85,000	99,000	86%
San Joaquin Riv. above Big Creek	D.W.R.	950,000	1,105,000	86%
San Joaquin Riv. below Friant	D.W.R.	1,130,000	1,300,000	87%
N. F. Kings Riv. nr. Cliff Camp	D.W.R.	220,000	252,000	87%
Kings Riv. at Piedra[3]	D.W.R.	1,100,000	1,269,000	87%
Kaweah Riv. nr. Three Rivers[3]	D.W.R.	250,000	282,000	89%
Tule Riv. nr. Porterville[3]	D.W.R.	45,000	50,000	90%
Kern Riv. nr. Kernville[3] [4]	D.W.R.	330,000	381,000	87%
Kern Riv. nr. Bakersfield[3]	D.W.R.	400,000	468,000	85%

TABLE 5 - UNIMPAIRED RUNOFF[1] FORECASTS, APRIL 1, 1954 (Cont'd)

Area, Stream, and Station	Source of Forecast[2]	April 1-July 31, Inc. 1954 Forecast Acre-Feet	50-Year Normal 1901-1950 Acre-Feet	1954 Forecast Per Cent of Normal
LAHONTAN				
Little Truckee Riv. at Boca	T.B.W.C.	69,000	95,000	73%
Truckee Riv. at Farad[5]	T.B.W.C.	205,000	281,000	73%
Lake Tahoe[3] [5]	T.B.W.C.	Rise 1.05'	Rise 1.5	71%
W. Carson at Woodfords	N.C.S.S.	50,000	64,000	78%
Carson Riv. at Fort Churchill	N.C.S.S.	145,000	190,000	76%
E. Walker nr. Bridgeport	N.C.S.S.	55,000[7]	70,000[7]	78%
W. Walker nr. Coleville	N.C.S.S.	140,000	172,000	81%
Owens Riv. nr. Round Valley	L.A.D.W.P.	67,900	71,560	95%
COLORADO DESERT				
Colorado Riv. at Grand Canyon[3]	U.S.B.R.	7,200,000	8,787,000[10]	82%

1/ Corrected for upstream regulation.

2/ O.C.S.S. - Oregon Cooperative Snow Surveys; D.W.R. - Division of Water Resources, State of California; T.B.W.C. - Truckee Basin Water Forecast Committee; N.C.S.S. - Nevada Cooperative Snow Surveys; L.A.D.W.P. - Los Angeles Department of Water and Power; U.S.B.R. - United States Bureau of Reclamation.

3/ Uncorrected for upstream regulation.

4/ Includes Kern River #3 Canal.

5/ Assuming Lake Tahoe gates closed.

6/ April through June.

7/ April through September.

8/ 10-year normal (1942 through 1951).

9/ Normals not available.

10/ 30-year normal (1923 through 1952).

TABLE 6

UNIMPAIRED APRIL-JULY RUNOFF[1/]
(Thousands of Acre-Feet)

April 1, 1954

RIVER AND STATION	YEAR							
	50-Year Normal (1901-1950)	1948	1949	1950	1951	1952	1953	1954 Forecast
Sacramento River at Shasta Dam[2/]	1,944	2,697	1,506	1,460	1,474	2,830	2,128	2,000
Feather River near Oroville	2,056	2,497	1,416	1,988	1,505	4,638	2,381	1,900
Yuba River near Smartville	1,169	1,406	961	1,161	867	2,424	984	1,000
American River at Fair Oaks	1,463	1,699	1,243	1,593	1,100	2,864	1,631	1,050
Mokelumne River near Mokelumne Hill	513	520	434	571	346	959	493	400
Stanislaus River below Melones Power House	785	764	606	832	531	1,438	719	620
Tuolumne River above La Grange Dam	1,286	1,183	1,026	1,180	947	2,145	1,117	1,050
Merced River at Exchequer	667	598	509	552	439	1,073	451	550
San Joaquin River below Friant	1,300	1,036	976	1,010	921	2,199	874	1,130
Kings River at Piedra[2/]	1,269	869	821	1,028	854	2,196	867	1,100
Kaweah River near Three Rivers[2/]	282	226	181	222	172	588	213	250
Tule River near Porterville[2/]	48	41	24	22	23	155	35	45
Kern River near Bakersfield[2/]	468	240	210	300	263	1,119	329	400

1/ Corrected for upstream regulation.

2/ Uncorrected for upstream regulation.

TABLE 7

UNIMPAIRED SEASONAL RUNOFF[1], 1953-54

APRIL 1, 1954

River and Station	ACRE-FEET			
	Computed[2]	Forecasts		Total
	Oct. 1-Mar. 31	Apr. 1-July 31	Aug. 1-Sept. 30	Oct. 1-Sept. 30
Sacramento River near Red Bluff	5,820,000	2,700,000	500,000	9,020,000
Feather River near Oroville	2,060,000	1,900,000	180,000	4,140,000
Yuba River near Smartville	930,000	1,000,000	40,000	1,970,000
American River at Fair Oaks	920,000	1,050,000	22,000	1,992,000
Mokelumne River near Mokelumne Hill	170,000	400,000	3,000	573,000
Stanislaus River below Melones Power House	210,000	620,000	10,000	840,000
Tuolumne River above La Grange Dam	410,000	1,050,000	25,000	1,485,000
Merced River at Exchequer	180,000	550,000	13,000	743,000
San Joaquin River below Friant	270,000	1,130,000	60,000	1,460,000
Kings River at Piedra[3]	230,000	1,100,000	45,000	1,375,000
Kaweah River near Three Rivers[4]	70,000	250,000	6,000	326,000
Tule River near Porterville[4]	30,000	45,000	0	75,000
Kern River near Bakersfield[4]	140,000	400,000	40,000	580,000

1/ Corrected for upstream regulation.

2/ Based on unpublished records, subject to revision, computed to nearest 10,000 acre-feet.

3/ Corrected for Pine Flat operation only.

4/ Uncorrected for upstream regulation.

TABLE 8

UNIMPAIRED SEASONAL RUNOFF[1] IN PER CENT OF NORMAL

October 1 to September 30

April 1, 1954

River	Station	Estimated Seasonal Runoff 1953-54 Acre-Feet	50-Year Normal (1901-1950) Acre-Feet	Seasonal Runoff in Per Cent of Normal: Actual 1949-50	1950-51	1951-52	1952-53	Estimated 1953-54
Sacramento	Red Bluff	9,020,000	8,288,000	69%	110%	139%	117%	109%
Feather	Oroville	4,140,000	4,496,000	85%	126%	176%	115%	92%
Yuba	Smartville	1,970,000	2,345,000	95%	151%	176%	109%	84%
American	Fair Oaks	1,992,000	2,718,000	98%	170%	183%	98%	73%
Sacramento	Sacramento[2]	-	-	81%	128%	160%	113%	96%
Mokelumne	Mokelumne Hill	573,000	756,000	100%	153%	175%	90%	76%
Stanislaus	Melones	840,000	1,174,000	92%	144%	164%	82%	72%
Tuolumne	La Grange	1,485,000	1,884,000	82%	132%	163%	77%	79%
Merced	Exchequer	743,000	994,000	72%	123%	157%	63%	75%
San Joaquin	Friant	1,460,000	1,787,000	73%	104%	171%	66%	82%
San Joaquin	Vernalis[2]	-	-	80%	124%	164%	74%	78%
Combined Sacramento and San Joaquin[2]		-	-	81%	128%	161%	103%	91%
Kings	Piedra[3]	1,375,000	1,690,000	76%	95%	169%	68%	81%
Kaweah	Three Rivers[3]	326,000	411,000	73%	102%	201%	75%	79%
Tule	Porterville[3]	75,000	102,000	46%	109%	207%	75%	74%
Kern	Bakersfield[3]	580,000	729,000	61%	78%	203%	94%	80%

1/ Corrected for upstream regulation.

2/ Actual runoff not computed. Percentages are based on runoff of the major tributaries listed above.

3/ Uncorrected for upstream regulation.

A P P E N D I X B

BASIC DATA

TABLE 9

PRECIPITATION DATA

JULY 1, 1953 TO MARCH 31, 1954

1 BASIN AND PRECIPITATION STATION	ELEVATION in FEET	2 SOURCE of DATA	PRECIPITATION DURING MARCH, 1954			PRECIPITATION FROM JULY 1, 1953 TO MARCH 31, 1954			3 Normal Seasonal Precipitation (July to June) Inches
			Total (Inches)	3 Normal (Inches)	In per cent of Normal	Total (Inches)	3 Normal (Inches)	In per cent of Normal	
NORTH COASTAL AREA									
Crescent City	35	U.S.W.B.	4.78	8.33	57%	59.83	59.49	101%	69.99
Yreka	2625	U.S.W.B.	1.55	1.89	82%	17.37	15.36	113%	17.87
Eureka	43	U.S.W.B.	3.76	5.08	74%	36.88	32.09	115%	37.32
Weaverville	2030	U.S.W.B.	5.57	3.93	142%	39.03	30.26	129%	33.63
Fort Bragg	74	U.S.W.B.	5.81	4.96	117%	34.11	33.05	103%	37.50
Ukiah	650	U.S.W.B.	5.61	4.66	120%	29.56	31.86	93%	35.45
Santa Rosa	167	U.S.W.B.	5.74	4.08	141%	23.81	25.86	92%	29.18
SAN FRANCISCO BAY AREA									
Napa State Hospital	60	U.S.W.B.	4.34	3.36	129%	15.62	21.27	73%	23.70
San Francisco	52	U.S.W.B.	4.56	3.04	150%	13.20	18.57	71%	20.53
Oakland	440	U.S.W.B.	2.69	3.30	82%	10.06	19.62	51%	21.95
Redwood City	31	U.S.W.B.	3.07	3.13	98%	12.94	18.88	69%	20.82
San Jose	95	U.S.W.B.	2.99	2.30	130%	9.45	12.20	78%	13.70
CENTRAL COASTAL AREA									
Santa Cruz	125	U.S.W.B.	6.65	4.20	158%	20.07	25.75	78%	28.57
Hollister	284	U.S.W.B.	3.67	2.24	164%	9.82	11.69	84%	13.13
Salinas	74	U.S.W.B.	3.41	2.33	146%	8.71	12.24	71%	13.73
Big Sur State Park	300	U.S.W.B.	8.73	6.31	138%	28.92	34.05	85%	37.99
King City	320	U.S.W.B.	3.37	1.91	176%	9.25	9.54	97%	10.49
Paso Robles	740	U.S.W.B.	N.R.	2.79	-	-	14.49	-	15.91
San Luis Obispo	300	U.S.W.B.	4.90	3.63	135%	18.37	19.71	93%	21.81
Santa Maria	217	U.S.W.B.	3.44	2.63	131%	10.34	13.04	79%	14.56
Santa Barbara	120	U.S.W.B.	3.81	3.39	112%	14.93	16.88	88%	18.51
SOUTH COASTAL AREA									
Valley Stations									
Ventura	50	U.S.W.B.	3.92	2.91	135%	12.75	14.50	88%	15.63
Los Angeles	312	U.S.W.B.	2.99	2.70	111%	11.76	13.60	86%	14.90
San Bernardino	1094	U.S.W.B.	4.90	3.05	161%	15.81	15.26	104%	17.47
Escondido	750	U.S.W.B.	5.21	2.88	181%	13.91	15.00	93%	17.03
San Diego	19	U.S.W.B.	4.31	1.67	258%	9.00	9.59	94%	10.58
El Capitan Dam	610	U.S.W.B.	7.38	3.31	223%	15.37	15.09	102%	17.97

1 Certain of the stations are not actually in the basin shown, but are closely adjacent. Stations representative of more than one basin are listed under each basin.

2 U.S.W.B. - United States Weather Bureau; L.A.C.F.C.D. - Los Angeles County Flood Control District; D.W.R. - Division of Water Resources; P.G.&E. - Pacific Gas and Electric Co.; S.C.E.C. - Southern California Edison Co.; C.E.P.C. - California Electric Power Co.; L.A.D.W.P. - Los Angeles Department of Water and Power.

3 Based upon the 50-year period 1900-01 - 1949-50, inclusive. When the period is less than 50 years, the normal has been computed by comparison with stations having complete records. Normals are therefore based upon the same period and are comparable.

R.N.C. - Record Not Complete.

N.R. - No Report.

TABLE 5 PRECIPITATION DATA - JULY 1, 1953 TO MARCH 31, 1954 (Cont'd)

1 BASIN AND PRECIPITATION STATION	ELEVATION in FEET	2 SOURCE of DATA	PRECIPITATION DURING MARCH, 1954 Total (Inches)	3 Normal (Inches)	In per cent of Normal	PRECIPITATION FROM JULY 1, 1953 TO MARCH 31, 1954 Total (Inches)	3 Normal (Inches)	In per cent of Normal	3 Normal Seasonal Precipitation (July to June) Inches
SOUTH COASTAL AREA (Cont'd)									
Los Angeles River									
Opids Camp	4480	L.A.C.F.C.D.	10.34	7.68	135%	33.50	38.56	87%	40.82
Loomis Ranch	4050	L.A.C.F.C.D.	6.71	3.82	176%	17.21	18.61	92%	20.76
Haines Canyon, Upper	3450	L.A.C.F.C.D.	6.65	5.62	118%	22.89	25.24	91%	29.62
Clear Creek	3300	L.A.C.F.C.D.	7.63	5.93	129%	26.79	28.20	95%	31.00
Sleepy Hollow Ranch	2950	L.A.C.F.C.D.	6.71	5.98	112%	22.64	27.78	81%	31.18
Briggs Terrace	2310	L.A.C.F.C.D.	6.56	5.39	122%	22.45	24.68	91%	27.75
Haines Canyon, Lower	2250	L.A.C.F.C.D.	5.59	4.24	132%	17.89	22.74	79%	25.96
La Crescenta	2069	U.S.W.B.	N.R.	4.88	-	-	24.56	-	27.71
Big Tujunga Dam #1	2050	L.A.C.F.C.D.	7.77	5.75	135%	24.26	26.86	90%	30.11
Arroyo Seco Ranger Station	1530	L.A.C.F.C.D.	4.81	4.67	103%	17.58	23.67	74%	26.39
Little Tujunga Canyon	1440	L.A.C.F.C.D.	N.R.	3.50	-	-	17.10	--	19.28
San Gabriel River									
Table Mountain Observatory	7500	L.A.C.F.C.D.	5.66	2.20	257%	16.61	13.11	127%	14.58
Big Pines Camp	6860	L.A.C.F.C.D.	6.76	5.02	135%	22.33	24.36	92%	27.18
Mt. Wilson	5850	U.S.W.B.	6.81	5.98	114%	25.94	29.73	87%	33.34
Crystal Lake, East	5740	L.A.C.F.C.D.	10.56	7.61	139%	30.34	34.35	88%	39.75
Falling Springs	4650	L.A.C.F.C.D.	8.60	6.06	142%	26.74	29.74	90%	32.98
Opids Camp	4480	L.A.C.F.C.D.	10.34	7.68	135%	33.50	38.56	87%	40.82
Camp Baldy	4300	L.A.C.F.C.D.	8.63	6.36	136%	30.27	29.91	101%	34.09
Hoegee's	2850	L.A.C.F.C.D.	8.26	8.44	98%	31.54	39.51	80%	43.88
Tanbark Flats	2700	L.A.C.F.C.D.	6.35	5.94	107%	24.77	27.31	91%	30.57
Henninger Flats	2650	L.A.C.F.C.D.	5.31	5.46	97%	20.94	25.76	81%	28.97
Mouth San Antonio Canyon	2500	U.S.W.B.	N.R.	4.96	-	-	24.20	-	27.32
San Dimas Guard Station	2400	L.A.C.F.C.D.	5.19	4.51	115%	21.95	22.20	99%	24.41
Sawpit Canyon	2000	L.A.C.F.C.D.	5.33	5.73	93%	20.89	27.14	77%	30.68
Santa Anita Fern Lodge	1950	L.A.C.F.C.D.	7.02	5.85	120%	25.22	30.24	83%	33.52
San Gabriel Dam #1 Camp	1600	L.A.C.F.C.D.	6.30	6.60	95%	25.08	28.24	89%	30.54
Big Santa Anita Dam	1400	L.A.C.F.C.D.	5.38	4.58	117%	20.07	22.69	88%	25.44
San Dimas Dam	1350	L.A.C.F.C.D.	4.86	4.45	109%	21.04	21.42	98%	23.45
Rogers Canyon	800	L.A.C.F.C.D.	5.29	4.40	120%	20.47	21.33	96%	23.66
Santa Ana River									
Table Mountain Observatory	7500	L.A.C.F.C.D.	5.66	2.20	257%	16.61	13.11	127%	14.58
Big Pines Camp	6860	L.A.C.F.C.D.	6.76	5.02	135%	22.33	24.36	92%	27.18
Big Bear Lake Dam	6800	U.S.W.B.	14.37	6.74	213%	39.16	32.19	122%	36.01
Running Springs	6230	D.W.R.	13.08	7.04	186%	N.R.	37.80	-	42.27
Squirrel Inn	5700	U.S.W.B.	15.69	8.26	190%	38.58	37.30	103%	42.70
Seven Oaks	5000	U.S.W.B.	8.29	5.00	166%	N.R.	24.83	-	28.02
Camp Baldy	4300	U.S.W.B.	8.63	6.36	136%	30.27	29.91	101%	34.09
Beaumont P. P.	3045	U.S.W.B.	7.08	4.12	172%	20.28	19.25	105%	22.59
Mill Creek #2	2950	U.S.W.B.	7.99	4.24	188%	20.21	19.45	104%	23.04
Santa Ana River	2850	U.S.W.B.	8.70	4.99	174%	26.15	22.79	115%	26.55
Beaumont	2589	U.S.W.B.	4.98	3.67	136%	16.19	16.68	97%	19.21
Mouth San Antonio Canyon	2500	U.S.W.B.	N.R.	4.96	-	-	24.20	-	27.32
Lytle Creek	2250	U.S.W.B.	8.1[illegible]	6.06	134%	30.49	30.81	99%	34.97

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

TABLE 9 - PRECIPITATION DATA - JULY 1, 1953 TO MARCH 31, 1954 (Cont'd)

1 BASIN AND PRECIPITATION STATION	ELEVATION in Feet	2 SOURCE of DATA	PRECIPITATION DURING MARCH, 1954			PRECIPITATION FROM JULY 1, 1953 TO MARCH 31, 1954			3 Normal Seasonal Precipitation (July to June) Inches
			Total (Inches)	3 Normal (Inches)	In per cent of Normal	Total (Inches)	3 Normal (Inches)	In per cent of Normal	
PACIFIC COAST BASINS									
San Diego County									
Cuyamaca	4680	U.S.W.B.	16.61	7.19	231%	34.40	34.09	101%	39.31
Julian	4220	U.S.W.B.	12.02	5.73	210%	27.47	27.22	101%	31.48
Warner Springs	3170	U.S.W.B.	5.82	2.83	206%	13.10	15.85	83%	17.72
Campo	3000	U.S.W.B.	6.45	2.97	217%	15.20	16.74	91%	18.93
Barrett Dam	1750	U.S.W.B.	7.19	3.45	208%	16.40	16.55	99%	18.87
El Cajon	560	U.S.W.B.	N.R.	2.43	-	-	12.42	-	14.02
CENTRAL VALLEY AREA									
Valley Stations									
Redding	718	U.S.W.B.	8.07	5.07	159%	34.73	32.59	107%	37.94
Willows	136	U.S.W.B.	3.64	2.44	149%	13.96	15.26	91%	17.17
Winters	132	U.S.W.B.	3.76	2.41	156%	13.89	14.56	95%	16.27
Grass Valley	2690	U.S.W.B.	10.77	8.01	134%	37.69	45.16	83%	51.95
Nevada City	2570	U.S.W.B.	10.22	7.82	131%	44.51	42.64	104%	49.33
Sacramento	25	U.S.W.B.	3.29	2.48	133%	13.45	14.45	93%	16.31
Stockton	15	U.S.W.B.	3.27	2.24	146%	8.15	12.40	66%	14.00
Los Banos	125	U.S.W.B.	1.95	1.48	132%	5.77	7.57	76%	8.65
Merced	173	U.S.W.B.	2.50	2.11	118%	9.74	10.29	95%	11.77
Fresno	331	U.S.W.B.	2.90	1.68	173%	8.03	8.15	99%	9.39
Bakersfield	489	U.S.W.B.	1.24	1.12	111%	4.35	5.13	85%	6.26
Upper Sacramento - Pit and McCloud Rivers									
Jess Valley	5400	D.W.R.	2.63	1.75	150%	12.00	11.74	102%	15.62
Alturas	4460	U.S.W.B.	1.76	1.30	135%	8.67	9.17	95%	12.00
Bieber	4200	D.W.R.	3.19	1.97	162%	11.81	13.15	90%	15.94
Mount Shasta	3555	U.S.W.B.	3.70	4.84	76%	33.66	29.28	115%	34.50
Hat Creek	3400	U.S.W.B.	3.06	2.13	144%	10.20	14.65	70%	17.78
McCloud	3270	U.S.W.B.	6.13	6.20	99%	52.13	41.90	124%	48.94
Fall River Mills	3340	U.S.W.B.	3.13	2.33	134%	12.17	14.94	81%	17.99
Dunsmuir	2285	U.S.W.B.	N.R.	7.53	-	-	52.54	-	54.36
Feather River									
Bucks Storage Dam	5100	P.G.&E.	13.56	10.67	127%	55.72	60.03	93%	68.76
Sierraville	5000	U.S.W.B.	4.42	3.22	137%	20.34	21.39	95%	24.59
Mineral	4935	U.S.W.B.	9.55	7.25	132%	43.16	43.45	99%	50.46
Portola	4832	U.S.W.B.	2.61	2.66	98%	14.57	15.25	96%	17.72
Canyon Dam	4570	U.S.W.B.	6.42	5.17	124%	32.79	31.35	105%	36.50
Chester	4550	U.S.W.B.	4.43	4.41	100%	27.92	26.56	105%	30.95
Doyle	4300	U.S.W.B.	1.25	1.21	103%	5.41	8.75	62%	10.30
Veramont	3500	P.G.&E.	8.00	4.62	173%	28.32	29.00	98%	33.10
Quincy	3409	U.S.W.B.	7.72	5.76	134%	38.14	33.82	113%	39.26
Caribou	3000	P.G.&E.	6.41	6.04	106%	34.41	34.84	99%	40.10
Lake Wilenor	2000	D.W.R.	9.29	7.77	120%	39.31	45.67	86%	52.99
Storrie	1760	P.G.&E.	10.08	9.75	103%	54.57	55.81	98%	63.65
Las Plumas	506	U.S.W.B.	8.90	6.98	128%	39.93	43.44	92%	49.11

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

TABLE 9 - PRECIPITATION DATA - JULY 1, 1953 TO MARCH 31, 1954 (Cont'd)

1 BASIN AND PRECIPITATION STATION	ELEVATION in FEET	2 SOURCE of DATA	PRECIPITATION DURING MARCH, 1954 Total (Inches)	3 Normal (Inches)	In per cent of Normal	PRECIPITATION FROM JULY 1, 1953 TO MARCH 31, 1954 Total (Inches)	3 Normal (Inches)	In per cent of Normal	3 Normal Seasonal Precipitation (July to June) Inches
CENTRAL VALLEY AREA (Cont'd)									
Yuba River									
Soda Springs	6870	U.S.W.B.	9.67	7.31	132%	42.19	40.15	105%	46.15
Bowman Dam	5346	U.S.W.B.	12.26	11.65	105%	51.61	48.16	107%	68.12
Lake Spaulding	4600	U.S.W.B.	13.23	10.41	127%	47.35	54.98	86%	64.60
Deer Creek	3700	U.S.W.B.	11.64	10.25	114%	49.05	57.65	85%	66.96
Downieville R.S.	2960	U.S.W.B.	N.R.	9.53	-	-	56.08	-	65.43
Dobbins (Near)	1650	U.S.W.B.	7.33	6.08	121%	33.13	35.04	95%	40.64
American River									
Twin Lakes	7970	U.S.W.B.	10.88	7.39	147%	36.09	38.07	95%	44.28
Soda Springs	6870	U.S.W.B.	9.67	7.31	132%	42.19	40.15	105%	46.15
Blue Canyon A. S.	5272	U.S.W.B.	13.14	8.90	148%	51.64	49.87	104%	58.46
Colfax	2420	U.S.W.B.	10.80	7.28	148%	40.15	39.72	101%	45.85
Placerville	1924	U.S.W.B.	10.17	6.42	158%	30.48	33.80	90%	38.76
Mokelumne River									
Twin Lakes	7970	U.S.W.B.	10.88	7.39	147%	36.09	38.07	95%	44.28
Salt Springs Reservoir	3660	D.W.R.	9.29	6.76	137%	32.04	35.94	89%	42.93
Tiger Creek	2400	U.S.W.B.	9.34	7.28	128%	32.07	38.21	84%	44.28
West Point	2326	U.S.W.B.	7.00	6.61	106%	25.71	33.26	77%	38.57
Electra	699	U.S.W.B.	7.27	5.33	136%	22.86	26.54	86%	30.36
Stanislaus River									
Strawberry Lake	5620	P.G.&E.	13.05	6.01	217%	36.30	31.68	115%	37.72
Calaveras Big Trees	4700	D.W.R.	11.55	9.11	126%	38.08	43.85	87%	51.41
Tuolumne River									
Strawberry Lake	5620	P.G.&E.	13.05	6.01	217%	36.30	31.68	115%	37.72
Lake Eleanor	4650	U.S.W.B.	12.83	6.99	184%	36.81	36.35	101%	42.58
Hetch Hetchy	3530	U.S.W.B.	8.18	5.71	143%	26.85	28.69	94%	34.28
Groveland	2828	D.W.R.	10.20	6.33	161%	26.40	32.00	82%	36.47
Sonora	1825	U.S.W.B.	7.38	5.77	128%	22.64	27.78	81%	31.87
Merced River									
Yosemite	3960	U.S.W.B.	8.56	5.43	158%	28.66	29.65	97%	34.68
Mariposa	1932	U.S.W.B.	7.33	5.25	141%	22.80	26.33	87%	29.49
Upper San Joaquin River									
Huntington Lake	7000	S.C.E.C.	8.27	4.93	168%	24.07	25.79	93%	30.69
Big Creek	4900	S.C.E.C.	7.77	5.19	150%	24.09	26.11	92%	31.27
Crane Valley	3500	P.G.&E.	12.21	6.69	183%	34.22	35.32	97%	40.54
North Fork	3000	U.S.W.B.	9.04	5.78	156%	26.73	29.22	91%	33.42
Auberry	2050	U.S.W.B.	5.03	4.85	104%	17.76	22.42	89%	25.52
Kings River									
Grant Grove	6775	U.S.W.B.	12.65	6.55	193%	37.25	33.91	110%	40.82

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

TABLE 9 - PRECIPITATION DATA - JULY 1, 1953 TO MARCH 31, 1954 (Cont'd)

[1] BASIN AND PRECIPITATION STATION	ELEVATION in FEET	[2] SOURCE of DATA	PRECIPITATION DURING MARCH, 1954			PRECIPITATION FROM JULY 1, 1953 TO MARCH 31, 1954			[3] Normal Seasonal Precipitation (July to June) Inches
			Total (Inches)	[3] Normal (Inches)	In per cent of Normal	Total (Inches)	[3] Normal (Inches)	In per cent of Normal	
CENTRAL VALLEY AREA (Cont'd)									
Kings River (Cont'd)									
Balch Camp	1300	P.G.&E.	7.51	4.54	165%	23.26	23.41	99%	27.88
Piedra	500	U.S.W.B.	4.07	3.19	128%	12.79	15.54	85%	17.68
Kaweah River									
Grant Grove	6775	U.S.W.B.	12.65	6.55	193%	37.25	33.91	110%	40.82
Giant Forest	6360	U.S.W.B.	12.54	7.20	174%	35.30	35.69	99%	42.43
Ash Mountain	1600	U.S.W.B.	7.23	4.95	146%	20.29	21.41	95%	25.83
Three Rivers	870	U.S.W.B.	5.14	3.54	145%	15.90	17.05	93%	20.22
Kern River									
Springville (Near)	4050	U.S.W.B.	10.41	6.40	163%	30.66	30.10	102%	35.69
Kern River #3 Intake	3640	S.C.E.C.	4.71	2.72	173%	16.50	15.20	109%	16.91
Glennville	3300	U.S.W.B.	4.73	3.71	128%	13.46	16.76	80%	20.05
Kernville	2600	U.S.W.B.	2.59	1.62	160%	7.87	9.17	86%	10.08
LAHONTAN AREA									
Valley Stations									
Jess Valley	5400	D.W.R.	2.63	1.75	150%	12.00	11.74	102%	15.62
Fort Bidwell	4735	U.S.W.B.	1.64	1.70	96%	9.51	11.46	83%	14.33
Susanville	4271	U.S.W.B.	1.80	2.28	79%	9.09	14.87	61%	17.36
Doyle	4300	U.S.W.B.	1.25	1.21	103%	5.41	8.75	62%	10.30
Truckee	6200	U.S.W.B.	5.08	4.20	121%	22.29	22.90	97%	25.82
Bridgeport	6473	U.S.W.B.	0.91	1.64	56%	7.72	8.17	94%	10.79
Bishop	4108	U.S.W.B.	1.02	0.77	132%	5.76	5.13	112%	5.73
Independence	3957	U.S.W.B.	0.20	0.48	42%	3.67	4.20	87%	4.65
Truckee & Tahoe Basins									
Twin Lakes	7970	U.S.W.B.	10.88	7.39	147%	36.09	38.07	95%	44.28
Soda Springs	6870	U.S.W.B.	9.67	7.31	132%	42.19	40.15	105%	46.15
Tahoe	6230	U.S.W.B.	5.05	4.41	115%	20.71	27.36	76%	31.27
Truckee	6200	U.S.W.B.	5.08	4.20	121%	22.29	22.90	97%	25.82
Carson River									
Twin Lakes	7970	U.S.W.B.	10.88	7.39	147%	36.09	38.07	95%	44.28
Walker River									
Bridgeport	6473	U.S.W.B.	0.91	1.64	56%	7.72	8.17	94%	10.79
Mono Basin									
Ellery Lake	9600	C.E.P.C.	3.57	4.25	84%	14.75	24.53	60%	29.79
Gem Lake	9120	C.E.P.C.	3.32	3.89	85%	13.20	22.73	58%	26.58
Owens Basin									
South Lake	9620	C.E.P.C.	3.21	2.34	137%	14.76	15.37	84%	17.80
Lake Sabrina	9100	C.E.P.C.	3.54	2.26	157%	15.21	15.62	97%	17.88
Intake #2 Bishop Creek	8000	C.E.P.C.	2.15	2.03	106%	8.28	10.75	77%	12.60
Crooked Creek	6700	L.A.D.W.P.	1.42	1.41	101%	9.22	8.68	106%	9.94

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

TABLE 9 - PRECIPITATION DATA - JULY 1, 1953 TO MARCH 31, 1954 (Cont'd)

1 BASIN AND PRECIPITATION STATION	ELEVATION in FEET	2 SOURCE of DATA	PRECIPITATION DURING MARCH, 1954			PRECIPITATION FROM JULY 1, 1953, TO MARCH 31, 1954			3 Normal Seasonal Precipitation (July to June) Inches
			Total (Inches)	3 Normal (Inches)	In per cent of Normal	Total (Inches)	3 Normal (Inches)	In per cent of Normal	
LAHONTAN AREA (Cont'd)									
Owens Basin (Cont'd)									
Big Pines Power House #3	5400	L.A.D.W.P.	0.57	1.09	52%	8.91	7.52	119%	8.17
Bishop	4108	U.S.W.B.	1.02	0.77	132%	5.76	5.13	112%	5.73
Independence	3957	U.S.W.B.	0.20	0.48	42%	3.67	4.20	87%	4.65
L. A. Aqueduct at Intake	3880	L.A.D.W.P.	0.16	0.50	32%	4.67	4.04	115%	4.41
Haiwee	3800	U.S.W.B.	0.54	0.76	71%	3.61	5.44	66%	6.17
Cottonwood Gates	3600	L.A.D.W.P.	0.69	0.62	111%	6.52	4.78	136%	5.24

COLORADO DESERT AREA No Reports Received

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

TABLE 10

SNOW SURVEY DATA

AS OF APRIL 1, 1954

1 AREAS, 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 as of APRIL 1 Inches	WATER CONTENT IN PER CENT OF APRIL 1 NORMAL	CORRESPONDING WATER CONTENT 1953 Inches
NORTH COASTAL AREA								
Scott River								
Etna Mountain	6700	3/27/54	75.4	47.2%	35.6	47.5	75%	46.7
Middle Boulder #1	6700	4/1/54	90.1	45.2%	40.7	34.2	119%	36.3
Middle Boulder #3	6400	3/31/54	65.6	45.6%	29.9	30.9	97%	31.3
Wolford Cabin	6400	4/1/54	88.9	43.2%	38.4	42.3	91%	44.5
Swampy John	6300	3/27/54	93.2	45.1%	42.0	48.9	86%	51.4
Marble Valley	5900	3/30/54	107.5	51.4%	55.3	55.6	99%	53.3
Log Lake	5500	4/1/54	60.7	47.9%	29.1	34.3	85%	25.9
Shasta River								
Parks Creek	6500	3/27/54	110.2	37.8%	41.6	33.7	124%	45.5
Little Shasta	6200	4/2/54	55.2	42.5%	23.5	26.4	89%	27.5
Sweetwater	5500	3/27/54	57.0	36.5%	19.0	14.4	132%	22.0
Trinity River								
Seven Up	7400	4/1/54	153.7	48.7%	74.9	65.2	115%	N.S.M.
Deadfall Lakes	7300	3/28/54	94.0	39.4%	37.0	34.7	107%	38.5
Red Rock Mountain	6600	3/31/54	121.3	42.2%	51.2	47.0	109%	48.3
Bear Basin	6500	4/1/54	100.1	48.4%	48.4	41.1	118%	22.4
Wolford Cabin	6400	4/1/54	88.9	43.2%	38.4	42.3	91%	44.5
Shimmy Lake	6400	4/2/54	130.7	45.7%	59.7	46.9	127%	N.S.M.
Whalen Station	5900	3/30/54	66.7	42.3%	28.2	20.3	139%	33.4
Highland Lakes	5700	3/31/54	90.9	44.3%	40.3	32.9	123%	41.4
Mumbo Basin	5700	3/30/54	82.9	41.7%	34.6	27.1	128%	35.3
Big Flat	5100	3/29/54	48.5	47.2%	22.9	19.2	119%	18.3
SAN FRANCISCO BAY AREA)								
) No Surveys Made in These Areas								
CENTRAL COASTAL AREA)								
SOUTH COASTAL AREA								
Santa Ana River								
Ice House #3	8000	4/3/54	96.0	42.1%	40.4	-	-	15.3
Ice House #2 - A	7660	4/3/54	74.3	51.1%	38.0	-	-	12.0
San Antonio #2	7060	4/1/54	80.5	41.7%	33.6	-	-	15.0

1 Courses pertinent to more than one basin are listed under each basin.
2 Computed 50-year normals for the period 1901-1950, inclusive.
N.S.M. - No Survey Made.
N.R. - No Report.

TABLE 10 - SNOW SURVEY DATA AS OF APRIL 1, 1954 (Cont'd)

1 AREAS, 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 as of APRIL 1 Inches	WATER CONTENT IN PER CENT OF APRIL 1 NORMAL	CORRES-PONDING WATER CONTENT 1953 Inches
SOUTH COASTAL AREA (Cont'd)								
San Jacinto Basin								
Cinco Poses	7500	N.R.	-	-	-	-	-	N.S.M.
Marion Mountain	6700	N.R.	-	-	-	-	-	N.S.M.
Thomas Mountain	6600	N.R.	-	-	-	-	-	N.S.M.
Cottonwood Creek (San Diego Co.)								
Little Laguna Meadow	5200	3/25/54	11.8	26.3%	3.1	-	-	N.S.M.
CENTRAL VALLEY AREA								
Upper Sacramento River								
Mount Shasta	8000	4/3/54	140.5	40.9%	57.5	52.6	109%	55.1
Deadfall Lakes	7300	3/28/54	94.0	39.4%	37.0	34.7	107%	38.5
Sand Flats	7000	4/3/54	121.2	40.2%	48.7	43.4	112%	49.0
North Fork Sacramento	6800	3/28/54	72.2	35.6%	25.7	22.7	113%	27.5
Parks Creek	6500	3/27/54	110.2	37.8%	41.6	33.7	124%	45.5
Gray Rock Lake	6300	4/2/54	117.5	39.8%	46.8	45.6	102%	52.1
Whalan Station	5900	3/30/54	66.7	42.3%	28.2	20.3	139%	33.4
Mumbo Basin	5700	3/30/54	82.9	41.7%	34.6	27.1	128%	35.3
Highland Lakes	5700	3/31/54	90.9	44.3%	40.3	32.9	123%	41.4
Slate Creek	5600	4/1/54	72.6	45.0%	32.6	30.1	108%	38.6
McCloud River								
Mount Shasta	8000	4/3/54	140.5	40.9%	57.5	52.6	109%	55.1
Brewer Creek	6000	3/27/54	92.4	45.8%	42.3	35.5	119%	39.2
Buck Mountain	5560	3/28/54	79.8	43.4%	34.6	27.1	128%	37.0
Stouts Meadow	5300	3/27/54	115.1	48.0%	55.3	45.8	121%	51.1
Ash Creek	5000	3/27/54	62.8	43.6%	27.4	23.3	112%	30.9
Dead Horse Canyon	4500	3/28/54	39.2	47.4%	18.6	17.2	108%	17.2
Pit River								
Mount Lassen	8400	3/31/54	199.8	43.0%	85.9	86.5	99%	73.4
Eagle Peak	7500	4/5/54	43.8	36.5%	16.0	18.2	88%	14.9
Blue Lake Ranch	7300	4/1/54	29.7	34.7%	10.3	13.6	76%	10.1
Cedar Pass	7200	3/30/54	41.7	35.0%	14.6	19.9	73%	16.6
Blacks Mountain	6650	3/31/54	26.8	46.5%	12.5	9.6	130%	8.5
Adin Mountain	6500	4/1/54	23.3	39.1%	9.1	13.8	66%	9.1
Thousand Lakes	6500	3/30/54	92.1	47.7%	43.9	51.5	85%	42.0
Medicine Lake	6250	4/2/54	90.1	40.2%	35.2	30.1	117%	33.0
Snow Mountain	6200	3/27/54	78.8	50.0%	39.4	38.6	102%	44.4
Manzanita Lake	6000	3/31/54	28.5	40.4%	11.5	10.3	112%	7.7
McElroy Pass	5800	3/29/54	Patches	-	-	3.5	-	Patches
Halls Flat	5600	3/31/54	Course Flooded	-	-	4.0	-	Course Flooded
Stouts Meadow	5300	3/27/54	115.1	48.0%	55.3	45.8	121%	51.1
Burney Springs	4800	3/29/54	Patches	-	-	4.9	-	Patches
Dead Horse Canyon	4500	3/28/54	39.2	47.4%	18.6	17.2	108%	17.2

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

TABLE 10 - SNOW SURVEY DATA AS OF APRIL 1, 1954 (Cont'd)

1 AREAS, 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 as of APRIL 1 Inches	WATER CONTENT IN PER CENT OF APRIL 1 NORMAL	CORRES-PONDING WATER CONTENT 1953 Inches
CENTRAL VALLEY AREA (Cont'd)								
Stony Creek								
Anthony Peak	6200	3/31/54	55.4	44.0%	24.4	32.0	76%	34.3
Plaskett Meadows	6000	4/1/54	43.7	42.8%	18.7	22.7	82%	27.2
Feather River								
Mount Lassen	8400	3/31/54	199.8	43.0%	85.9	86.5	99%	73.4
Mount Dyer	7400	4/7/54	63.4	46.5%	29.5	25.8	114%	26.6
Rowland Creek	6850	4/1/54	38.9	37.6%	14.3	21.4	67%	17.3
Church Meadows	6700	3/28/54	63.8	44.0%	28.1	36.4	77%	29.0
Yuba Pass	6700	3/27/54	68.1	41.6%	28.3	35.1	81%	29.0
Mt. Dyer #2	6200	4/7/54	40.1	41.6%	16.7	New Course 1951		16.3
Letterbox	5600	4/1/54	111.1	47.8%	53.1	54.3	98%	60.0
Silver Lake	6500	3/31/54	72.2	51.7%	37.3	30.7	121%	29.2
Eureka Bowl	6500	4/1/54	84.4	48.1%	40.6	46.7	87%	47.1
Fredonia Pass	6400	4/1/54	18.0	46.4%	8.4	9.9	85%	2.3
Harkness Flat	6400	3/31/54	65.6	44.1%	28.9	28.9	100%	33.2
Eureka Lake	6300	4/1/54	67.3	47.5%	32.0	36.2	88%	36.9
Three Lakes	6100	3/31/54	100.4	43.7%	43.9	40.4	109%	44.1
Mill Creek Flat	5800	3/31/54	89.0	45.8%	40.8	39.5	103%	48.4
Mount Stover	5500	N.R.	-	-	-	16.5	-	19.1
Fredonia Pass #2	5500	4/1/54	Patches	-	-	9.9	-	0
Browns Camp	5400	3/26/54	63.7	33.8%	21.5	24.3	88%	29.1
Gibsonville	5400	4/4/54	63.7	48.2%	30.7	40.0	77%	35.8
Haskins Flat	5400	3/23/54	79.5	41.7%	33.2	33.0	101%	39.0
Feather River Meadows	5000	3/30/54	61.0	49.8%	30.4	24.3	125%	24.8
Warner Creek	5000	4/2/54	36.5	50.6%	18.5	17.5	106%	15.4
Humbug Summit	5000	3/29/54	36.4	44.8%	16.3	13.2	124%	17.5
Chester Flat	4600	N.R.	-	-	-	8.1	-	Patches
Yuba River								
Webber Peak	8000	4/1/54	102.9	41.0%	42.1	44.8	94%	48.8
Castle Creek #5	7200	4/6/54	108.2	43.8%	47.4	54.4	87%	50.4
Meadow Lake	7200	4/2/54	119.8	41.0%	49.1	59.0	83%	56.2
Red Mountain	7200	3/31/54	104.5	39.8%	41.6	53.7	77%	49.3
English Mountain	7100	4/2/54	85.2	43.2%	36.8	46.5	79%	35.9
Donner Summit	7020	3/26/54	85.0	40.7%	34.6	44.3	78%	39.3
Lake Sterling	7000	3/31/54	115.6	41.1%	47.5	57.3	83%	54.7
Sawmill Flat	7000	3/31/54	105.0	43.2%	45.4	53.9	84%	53.4
Soda Springs	6750	3/26/54	83.4	40.3%	33.6	40.7	82%	38.8
Yuba Pass	6700	3/27/54	68.1	41.6%	28.3	35.1	81%	29.0
Church Meadows	6700	3/28/54	63.8	44.0%	28.1	36.4	77%	29.0
Furnace Flat	6600	3/31/54	97.4	44.3%	43.2	49.6	87%	N.S.M.
Lake Fordyce	6500	4/2/54	82.0	42.4%	34.8	42.3	82%	45.7
Findley Peak	6500	4/2/54	63.8	44.2%	28.2	31.8	89%	30.0
Jackson Meadows	6300	4/2/54	67.0	40.6%	27.2	32.0	85%	31.0
Cisco	5950	3/29/54	51.2	42.4%	21.7	25.8	84%	29.9

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

TABLE 10 - SNOW SURVEY DATA AS OF APRIL 1, 1954 (Cont'd)

1 AREAS, 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 as of APRIL 1 Inches	WATER CONTENT IN PER CENT OF APRIL 1 NORMAL	CORRES-PONDING WATER CONTENT 1953 Inches
CENTRAL VALLEY AREA (Cont'd)								
Yuba River (Cont'd)								
Cisco Flat	5800	3/29/54	50.2	42.7%	21.4	24.5	87%	30.2
Sardine Flat	5800	3/28/54	32.1	38.3%	12.3	19.4	63%	20.9
Six Mile Valley	5700	3/25/54	57.3	33.8%	19.4	26.2	74%	30.6
Bowman Lake	5630	4/2/54	47.1	44.4%	20.9	23.8	114%	25.8
Gibsonville	5400	4/4/54	63.7	48.2%	30.7	40.0	77%	35.8
Carpenter Flat	4900	3/25/54	38.4	31.3%	12.0	22.7	53%	22.8
Lake Spaulding	4900	3/25/54	68.3	29.1%	19.9	26.7	75%	34.0
American River								
Carson Pass	8600	3/31/54	79.3	40.4%	32.0	40.4	79%	32.3
Lake Lucille	8400	3/28/54	124.1	38.0%	47.2	63.5	74%	59.6
Emigrant Lake	8200	4/1/54	94.4	42.1%	39.7	New Course 1953		40.6
Rubicon Peak #1	8100	3/27/54	125.3	35.4%	44.3	48.0	92%	50.4
Tragedy Springs	7900	3/28/54	99.0	35.7%	35.3	48.0	74%	40.5
Twin Lakes	7900	4/2/54	68.0	40.1%	27.3	32.8	83%	30.9
Echo Summit	7500	4/1/54	82.8	37.2%	30.8	43.4	71%	34.7
Squaw Valley	7500	3/31/54	123.4	38.6%	47.7	New Course 1953		58.9
Lake Audrain	7300	3/31/54	82.8	36.6%	30.3	40.4	75%	35.8
Silver Lake	7300	3/28/54	64.1	31.8%	20.4	26.1	78%	24.6
Dorrington	7100	3/31/54	68.4	37.3%	25.5	36.2	70%	31.0
Donner Summit	7020	3/26/54	85.0	40.7%	34.6	44.3	78%	39.3
Ward Creek	7000	3/28/54	92.4	39.8%	36.8	48.4	76%	43.8
Phillips	6800	4/2/54	62.9	41.5%	26.1	32.1	81%	29.3
Soda Springs	6750	3/26/54	83.4	40.3%	33.6	40.7	82%	38.8
Tamarack Flat	6600	4/2/54	74.7	37.6%	28.1	32.8	86%	31.8
Huysink	6600	4/1/54	99.8	42.6%	42.5	51.9	82%	50.2
Onion Creek	6100	3/31/54	47.3	36.8%	17.4	26.0	67%	23.6
Cisco	5950	3/29/54	51.2	42.4%	21.7	25.8	84%	29.9
Six Mile Valley	5700	3/25/54	57.3	33.8%	19.4	26.2	74%	30.6
Strawberry	5700	4/2/54	20.2	37.6%	7.6	11.6	66%	12.4
Ice House	5300	N.S.M.	-	-	-	22.6	-	N.S.M.
Carpenter Flat	4900	3/25/54	38.4	31.3%	12.0	22.7	53%	22.8
Cosumnes River								
Corral Flat	7300	3/27/54	94.9	35.4%	33.6	43.7	77%	40.0
Lumberyard	6600	3/31/54	79.8	39.6%	31.6	36.2	87%	33.7
Hams Station	5600	3/31/54	18.7	35.6%	6.7	9.7	68%	0
Mokelumne River								
Highland Meadow	8800	4/5/54	114.8	40.6%	46.6	New Course 1952		48.8
Carson Pass	8600	3/31/54	79.3	40.4%	32.0	40.4	79%	32.3
Emigrant Lake	8200	4/1/54	94.4	42.1%	39.7	New Course 1953		40.6
Blue Lakes	8000	3/30/54	86.5	36.9%	31.9	39.5	87%	31.9
Twin Lakes	7900	4/2/54	68.0	40.1%	27.3	32.8	83%	30.9

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

TABLE 10 - SNOW SURVEY DATA AS OF APRIL 1, 1954 (Cont'd)

1 AREAS, 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 as of APRIL 1 Inches	WATER CONTENT IN PER CENT OF APRIL 1 NORMAL	CORRESPONDING WATER CONTENT 1953 Inches
CENTRAL VALLEY AREA (Cont'd)								
Mokelumne River (Cont'd)								
Tragedy Springs	7900	3/28/54	99.0	35.7%	35.3	48.0	74%	40.5
Wheeler Lake	7800	4/2/54	112.8	42.8%	48.3	56.6	85%	45.9
Pacific Valley	7500	4/3/54	80.4	39.9%	32.1	39.6	81%	32.6
Lake Alpine	7500	3/30/54	96.9	36.3%	35.2	43.4	81%	37.9
Silver Lake	7300	3/28/54	64.1	31.8%	20.4	26.1	78%	24.6
Corral Flat	7300	3/27/54	94.9	35.4%	33.6	43.7	77%	40.0
Bear Valley Ridge	6700	3/26/54	74.0	29.5%	21.8	29.6	74%	26.4
Lumberyard	6600	3/31/54	79.8	39.6%	31.6	36.2	87%	33.7
Big Meadow	6500	3/29/54	69.0	37.8%	26.1	34.4	76%	31.9
Cottage Spring	5700	4/3/54	28.9	36.7%	10.6	15.8	67%	15.4
Hams Station	5600	3/31/54	18.7	35.6%	6.7	9.7	68%	0
Dorrington	4800	4/3/54	8.1	40.0%	3.2	9.0	36%	8.3
Antelope Springs	4350	3/31/54	Patches	-	-	4.8	-	0
Stanislaus River								
Sonora Pass	8800	3/30/54	61.8	35.6%	22.0	26.3	84%	20.9
Highland Meadow	8800	4/5/54	114.8	40.6%	46.6	New Course 1952		48.8
Lower Relief Valley	8300	4/1/54	96.2	37.8%	36.4	43.7	83%	31.6
Soda Creek Flat	7900	4/2/54	61.3	35.9%	22.0	24.5	90%	19.1
Eagle Meadows	7500	3/30/54	75.2	32.2%	24.2	27.3	89%	21.0
Lake Alpine	7500	3/30/54	96.9	36.3%	35.2	43.4	81%	37.9
Pacific Valley	7500	4/3/54	80.4	39.9%	32.1	39.6	81%	32.6
Herring Creek	7400	3/26/54	95.8	30.1%	28.8	32.9	88%	25.4
Relief Dam	7300	4/1/54	64.5	36.3%	23.4	23.2	101%	20.0
Spicers	6600	3/31/54	72.6	39.2%	28.5	32.5	88%	26.9
Niagara Flat	6500	3/30/54	62.1	33.2%	20.6	23.5	88%	18.5
Big Meadow	6500	3/29/54	69.0	37.8%	26.1	34.4	76%	31.9
Cottage Spring	5700	4/3/54	28.9	36.7%	10.6	15.8	67%	15.4
Dorrington	4800	4/3/54	8.1	40.0%	3.2	9.0	36%	8.3
Tuolumne River								
Fletcher Lake	10300	3/28/54	92.7	31.4%	29.1	35.9	81%	25.9
Tioga Pass	9900	3/29/54	72.3	35.9%	26.0	28.8	90%	21.2
Dana Meadows	9700	3/29/54	82.4	34.5%	28.4	32.4	88%	24.2
Rafferty Meadows	9600	3/28/54	87.3	34.5%	30.3	33.4	94%	24.6
Center Mountain	9400	3/29/54	100.0	36.2%	36.2	39.4	92%	33.9
Bond Pass	9300	3/30/54	119.6	34.4%	41.2	44.8	92%	36.6
Grace Meadows	8800	3/28/54	100.3	37.5%	37.6	37.4	100%	31.8
Snow Flat	8700	3/30/54	118.8	32.7%	38.8	45.2	86%	35.0
Tuolumne Meadows	8600	3/28/54	61.8	29.3%	18.1	23.9	76%	17.6
Horse Meadow	8400	3/30/54	111.9	40.2%	45.0	47.6	94%	38.8
Lower Relief Valley	8300	4/1/54	96.2	37.8%	36.4	43.7	83%	31.6
Spotted Fawn	8000	3/31/54	117.5	38.5%	45.3	47.6	95%	37.5
Wilmer Lake	8000	3/28/54	112.2	35.8%	40.2	47.0	86%	36.4
Saches Springs	7900	3/31/54	103.6	37.4%	38.8	40.8	95%	34.1

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

TABLE 10 - SNOW SURVEY DATA AS OF APRIL 1, 1954 (Cont'd)

1 AREAS, 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 as of APRIL 1 Inches	WATER CONTENT IN PER CENT OF APRIL 1 NORMAL	CORRESPONDING WATER CONTENT 1953 Inches
CENTRAL VALLEY AREA (Cont'd)								
Tuolumne River (Cont'd)								
Huckleberry Lake	7800	3/31/54	108.7	38.8%	42.1	42.9	98%	35.7
Paradise	7600	3/27/54	96.6	40.6%	39.2	44.9	87%	37.2
Gin Flat	7100	3/29/54	91.5	36.3%	33.2	37.3	89%	31.4
Kibbey Ridge - Upper	6700	4/1/54	64.3	38.9%	25.0	35.0	71%	18.3
Vernon Lake	6700	3/26/54	83.3	33.4%	27.8	29.7	94%	25.7
Beehive Meadow	6500	3/25/54	100.6	31.1%	31.3	28.9	108%	27.4
Bell Meadows	6500	3/26/54	67.1	30.8%	20.7	22.4	92%	21.8
Kibbey Ridge - Lower	6200	4/1/54	82.1	41.2%	33.8	31.5	107%	25.8
Merced River								
Fletcher Lake	10300	3/28/54	92.7	31.4%	29.1	35.9	81%	25.9
Snow Flat	8700	3/30/54	118.8	32.7%	38.8	45.2	86%	35.0
Ostrander Lake	8200	3/27/54	91.1	37.2%	33.9	37.9	89%	24.7
Lake Tenaya	8150	3/29/54	78.8	42.5%	33.5	37.1	90%	25.3
Gin Flat	7100	3/29/54	91.5	36.3%	33.2	37.3	89%	31.4
Peregoy Meadows	7000	3/27/54	88.0	30.7%	27.0	31.4	86%	22.6
Upper San Joaquin River								
Mono Pass	11450	4/1/54	89.8	36.4%	37.2	31.7	117%	18.6
Piute Pass	11200	3/31/54	103.0	34.3%	35.3	35.1	100%	28.6
Emerald Lake	10800	3/3/54	105.5	31.8%	33.5	38.1	88%	21.3
Blackcap Basin	10800	3/29/54	96.2	33.9%	32.6	38.2	85%	22.0
Pioneer Basin	10300	4/1/54	98.2	34.2%	33.6	38.4	88%	24.1
Heart Lake	10100	3/31/54	89.0	30.9%	27.5	29.2	94%	17.7
Volcanic Knob	10100	3/28/54	87.3	33.9%	29.6	33.3	89%	19.3
Rose Marie	10000	3/31/54	89.1	31.8%	28.3	31.0	91%	18.9
Colby Meadow	10000	3/30/54	78.3	28.6%	22.4	23.5	95%	13.9
Upper Burnt Corral	9700	4/1/54	117.2	31.9%	37.4	37.7	99%	21.6
Mammoth Pass	9500	3/31/54	119.3	35.4%	42.3	47.1	90%	34.1
Agnew Pass	9450	3/28/54	85.7	35.9%	30.8	33.2	93%	23.1
Kaiser Pass	9200	4/3/54	109.2	35.5%	38.8	40.6	96%	26.9
Dutch Lake	9100	4/3/54	89.3	31.5%	28.1	29.8	94%	19.9
Coyote Lakes	8600	4/6/54	86.8	36.5%	31.7	32.7	97%	21.6
Cora Lakes	8500	4/2/54	98.3	33.5%	32.9	38.9	85%	27.2
Nellie Lake	8250	4/5/54	89.1	39.4%	35.1	40.2	87%	29.6
Vermilion Valley	7500	3/27/54	38.5	35.8%	13.8	13.6	101%	8.7
Chilkoot Lake	7450	4/4/54	97.4	40.5%	39.4	41.2	96%	30.2
Chilkoot Meadow	7250	4/4/54	92.0	41.1%	37.8	39.5	96%	27.0
Florence Lake	7200	4/3/54	26.9	39.8%	10.7	9.1	118%	6.9
Huntington Lake	7000	4/5/54	54.8	38.1%	20.9	23.2	90%	14.7
Clover Meadow	7000	4/1/54	70.5	34.6%	24.4	26.1	94%	19.6
Jackass Meadows	7000	4/1/54	65.9	37.5%	24.7	24.0	103%	16.1
Chiquito Creek	6800	3/31/54	66.7	33.6%	22.4	23.5	95%	19.3
Beasore Meadow	6800	4/4/54	70.9	40.0%	28.4	31.8	89%	23.1
Poison Meadow	6650	4/4/54	69.5	41.7%	29.0	30.9	94%	22.3

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

TABLE 10 - SNOW SURVEY DATA AS OF APRIL 1, 1954 (Cont'd)

1 AREAS, 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 as of APRIL 1 Inches	WATER CONTENT IN PER CENT OF APRIL 1 NORMAL	CORRESPONDING WATER CONTENT 1953 Inches
CENTRAL VALLEY AREA (Cont'd)								
Kings River								
Bishop Pass	11400	3/26/54	93.9	34.6%	32.5	34.5	94%	24.4
Blackcap Basin	10800	3/29/54	96.2	33.9%	32.6	38.2	85%	22.0
Upper Burnt Corral	9700	4/1/54	117.2	31.9%	37.4	37.7	99%	21.6
Beard Meadow	9300	3/28/54	103.2	32.2%	33.2	36.2	92%	22.4
Rowell Meadow	9200	N.R.	-	-	-	30.8	-	21.6
Woodchuck Meadow	9100	3/27/54	97.7	33.6%	32.8	33.5	98%	17.6
Swamp Meadow	9000	4/2/54	104.1	37.0%	38.5	40.0	95%	19.0
Round Corral	9000	3/26/54	106.8	33.2%	35.4	36.8	96%	22.0
Junction Meadow	8500	3/30/54	66.0	32.6%	21.5	21.9	98%	10.4
Helm Meadow	8500	4/2/54	74.8	36.3%	27.2	28.8	94%	9.8
Long Meadow	8500	3/31/54	94.8	32.9%	31.2	31.1	100%	14.6
Statum Meadow	8300	3/26/54	98.1	36.7%	36.0	33.6	107%	19.6
Post Corral Meadow	8200	3/31/54	95.4	30.8%	29.4	29.1	101%	13.0
Sand Meadow	8050	4/1/54	84.0	35.2%	29.5	31.4	94%	14.1
Big Meadows	7660	N.R.	-	-	-	29.6	-	19.3
Horse Corral Meadow	7600	N.R.	-	-	-	20.7	-	13.2
Bear Ridge	7400	4/1/54	78.0	36.2%	28.2	30.1	94%	N.S.M.
Fred Meadows	7200	4/1/54	76.2	36.5%	27.8	25.4	109%	N.S.M.
Grant Grove	6660	3/28/54	60.7	32.8%	19.9	16.2	123%	8.6
Cliff Camp	6500	3/23/54	48.3	28.4%	13.7	15.3	90%	4.5
Dinkey Sand Flat	5500	3/31/54	54.6	34.1%	18.6	15.6	119%	8.0
Kaweah River								
Farewell Gap	9000	4/4/54	97.8	36.5%	35.8	New Course 1951		24.1
Panther Meadow	8650	3/27/54	98.8	36.0%	35.6	40.3	88%	30.7
Hockett Meadow	8600	3/30/54	95.6	33.5%	32.0	31.9	100%	24.2
Quinn Ranger Station	8000	3/31/54	58.3	36.8%	21.5	22.3	96%	16.4
Mineral King	8000	4/3/54	59.8	41.2%	24.6	24.9	99%	13.0
Big Meadows	7660	N.R.	-	-	-	29.6	-	19.3
Giant Forest	6360	3/28/54	57.1	33.3%	19.0	18.7	102%	11.9
Tule River								
Quaking Aspen	7000	3/29/54	50.9	35.6%	18.1	16.8	108%	6.4
Old Enterprise Mill	6600	4/1/54	56.4	40.2%	22.7	20.9	109%	11.8
Deer Creek								
Dead Horse Meadow	7200	4/1/54	42.4	34.7%	14.7	16.2	91%	7.9
Kern River								
Big Horn Plateau	11400	3/29/54	66.9	31.6%	21.1	23.4	90%	16.7
Cottonwood Pass	11100	3/26/54	41.1	28.7%	11.8	16.5	71%	9.4
Siberian Pass	10800	3/27/54	58.2	30.4%	17.7	17.4	102%	13.1
Crabtree Meadow	10800	3/28/54	57.1	29.4%	16.8	18.9	89%	12.7
Guyot Flat	10700	3/28/54	61.4	29.3%	18.0	20.2	89%	14.2

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

TABLE 10 - SNOW SURVEY DATA AS OF APRIL 1, 1954 (Cont'd)

1 AREAS, 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 as of APRIL 1 Inches	WATER CONTENT IN PER CENT OF APRIL 1 NORMAL	CORRES-PONDING WATER CONTENT 1953 Inches
CENTRAL VALLEY AREA (Cont'd)								
Kern River (Cont'd)								
Sandy Meadows	10700	3/29/54	56.2	30.2%	17.0	19.5	87%	12.7
Tyndall Creek	10600	3/30/54	72.8	26.6%	19.4	19.1	101%	13.0
Rock Creek	9900	3/27/54	57.1	31.0%	17.7	16.7	106%	11.2
Big Whitney Meadow	9800	3/26/54	53.8	28.8%	15.5	16.5	94%	12.2
Round Meadow	9000	N.R.	-	-	-	27.2	-	17.1
Ramshaw Meadows	8800	N.R.	-	-	-	12.2	-	7.2
Little Whitney Meadows	8500	N.R.	-	-	-	14.4	-	7.8
Bonita Meadows	8400	N.R.	-	-	-	15.0	-	8.1
Casa Vieja Meadows	8400	N.R.	-	-	-	20.4	-	12.8
Monache Meadows	8000	N.R.	-	-	-	9.2	-	4.9
Quinn Ranger Station	8000	3/31/54	58.3	36.8%	21.5	22.3	96%	16.4
Beach Meadows	7800	N.R.	-	-	-	11.0	-	5.7
Burnt Corral Meadow	6200	N.R.	-	-	-	5.4	--	0
Lloyd Meadows	5600	N.R.	-	-	-	3.7	-	0
LAHONTAN AREA								
Susan River								
Silver Lake	6500	3/31/54	72.2	57.1%	37.3	30.7	121%	29.2
Fredonia Pass	6400	4/1/54	18.0	46.4%	8.4	9.9	85%	2.3
Norvell Flat	5700	4/1/54	48.2	46.3%	22.3	16.5	135%	17.4
Truckee River								
Mount Rose (In Nevada)	9000	4/3/54	73.3	36.5%	26.8	34.1	79%	33.8
Independence Lake	8400	3/28/54	90.6	37.8%	34.2	45.4	75%	42.0
Webber Peak	8000	4/1/54	102.9	41.0%	42.1	44.8	94%	38.0
Donner Summit	7020	3/26/54	85.0	40.7%	34.6	44.3	78%	39.3
Independence Camp	7000	3/27/54	55.3	39.1%	21.6	25.6	84%	26.1
Ward Creek	7000	3/28/54	92.4	39.8%	36.8	48.4	76%	49.9
Webber Lake	7000	4/1/54	69.3	36.8%	25.5	34.5	74%	30.9
Sage Hen Creek	6500	3/29/54	43.4	37.3%	16.2	20.0	80%	19.9
Truckee #2	6400	3/30/54	36.8	35.1%	12.9	16.4	79%	15.0
Independence Creek	6300	3/27/54	33.6	36.0%	12.1	14.8	82%	16.4
Tahoe City	6250	3/27/54	16.9	36.7%	6.2	13.1	47%	14.4
Truckee Ranger Station	6000	4/1/54	25.1	35.0%	8.8	12.0	73%	6.3
Donner Lake	5950	3/30/54	54.1	39.8%	21.5	25.9	83%	25.9
Boca	5900	3/29/54	9.9	41.4%	4.1	5.5	75%	3.5
Lake Tahoe								
Mount Rose (In Nevada)	9000	4/3/54	73.3	36.5%	26.8	34.1	79%	33.8
Lake Lucille	8400	3/28/54	124.1	38.0%	47.2	63.5	74%	59.6
Rubicon Peak #1	8100	3/27/54	125.3	35.4%	44.3	48.0	92%	52.2
Marlette Lake	8000	4/5/54	48.9	36.0%	17.6	26.5	66%	22.1
Hagans Mds. (Freel Peak)	8000	3/27/54	46.2	33.1%	15.3	19.9	77%	17.8
Rubicon Peak #2	7500	3/27/54	72.8	34.2%	24.9	32.9	76%	31.9

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

TABLE 10 - SNOW SURVEY DATA AS OF APRIL 1, 1954 (Cont'd)

1 AREAS, 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 as of APRIL 1 Inches	WATER CONTENT IN PER CENT OF APRIL 1 NORMAL	CORRES-PONDING WATER CONTENT 1953 Inches
LAHONTAN AREA (Cont'd)								
Lake Tahoe (Cont'd)								
Echo Summit	7500	4/1/54	82.8	37.2%	30.8	43.4	71%	34.7
Squaw Valley	7500	3/31/54	123.4	38.6%	47.7	New Course 1953		58.9
Dagetts Pass (In Nevada)	7350	3/26/54	33.9	29.5%	10.0	13.9	72%	12.0
Freel Bench	7300	3/27/54	29.6	33.8%	10.0	12.3	81%	10.9
Ward Creek	7000	3/28/54	92.4	39.8%	36.8	48.4	76%	49.9
Rubicon Peak #3	6700	3/27/54	60.1	30.9%	18.6%	22.2	84%	24.5
Glenbrook (In Nevada) #2	6900	3/29/54	45.6	30.5%	13.9	16.7	83%	14.0
Richardson #2	6500	3/26/54	52.8	30.3%	16.0	20.2	79%	19.2
Upper Truckee	6400	3/29/54	22.8	36.8%	8.4	8.6	98%	9.3
Little Valley (In Nevada)	6300	N.S.M.	-	-	-	10.7	-	4.9
Tahoe City	6250	3/27/54	16.9	36.7%	6.2	13.1	47%	14.4
Carson River								
Carson Pass	8600	3/31/54	79.3	40.4%	32.0	40.4	79%	32.3
Blue Lakes	8000	3/30/54	86.5	36.9%	31.9	39.5	87%	31.9
Walker River								
Virginia Lakes	9500	3/28/54	50.8	33.1%	16.8	21.2	79%	15.5
Center Mountain	9400	3/29/54	100.0	36.2%	36.2	39.4	92%	33.9
Sonora Pass	8800	3/30/54	61.8	35.6%	22.0	26.3	84%	20.9
Buckeye Forks	8500	3/29/54	57.1	34.8%	19.9	22.3	89%	20.4
Willow Flat	8250	3/31/54	26.0	39.2%	10.2	13.7	74%	7.1
Buckeye Roughs	7900	3/30/54	50.8	36.2%	18.4	21.8	84%	18.9
Leavitt Meadows	7200	3/30/54	22.2	41.0%	9.1	10.2	89%	4.5
Mono Lake								
Gem Pass	10450	3/28/54	81.3	35.8%	29.1	32.3	90%	23.0
Saddle Bags Lake	10000	3/30/54	82.0	33.9%	27.8	36.7	76%	26.9
Tioga Pass	9900	3/29/54	72.3	35.9%	26.0	28.8	90%	21.2
Dana Meadows	9700	3/29/54	82.4	34.5%	28.4	32.4	88%	24.2
Rhinedollar Lake	9500	3/29/54	78.8	31.5%	24.8	32.5	76%	24.3
Agnew Pass	9450	3/28/54	85.7	35.9%	30.8	33.2	93%	23.1
Gem Lake	9200	3/28/54	81.0	35.1%	28.4	28.9	98%	19.6
Upper Owens River								
Mammoth Pass #1	9500	3/31/54	119.3	35.4%	42.3	47.1	90%	34.1
Minarettes #2	9000	4/1/54	88.7	35.8%	31.8	34.1	93%	25.7
Minarettes #1	8300	3/3/54	55.6	35.7%	19.9	23.7	84%	16.6
Mammoth Pass #2	8300	3/31/54	63.4	34.4%	21.8	22.4	97%	16.0
Rock Creek								
Mono Pass	11450	4/1/54	89.8	36.4%	37.2	31.7	117%	18.6
Rock Creek #3	10000	4/2/54	48.2	36.3%	17.5	15.2	115%	9.9
Rock Creek #2	9050	4/2/54	36.4	36.3%	13.2	10.5	126%	7.0
Rock Creek #1	8700	4/2/54	29.0	35.7%	10.4	9.6	108%	3.4

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

TABLE 11

AERIAL PHOTOGRAPHIC SNOW DEPTH MEASUREMENTS

As of April 1, 1954

Area, Stream Basin and Name of Marker	Source of Data*	Elevation	Date of Measurement	Depth of Snow Inches
CENTRAL VALLEY AREA				
Tuolumne River				
Dana Meadows	C.E.P.C.	9,700	4/1/54	74
San Joaquin River				
Humphreys Basin	S.C.E.C.	11,700	4/5/54	78
Pioneer Basin	S.C.E.C.	10,500	4/5/54	84
Emerald Lake	S.C.E.C.	10,500	4/5/54	102
Island Pass	C.E.P.C.	10,300	4/1/54	102
Bench Canyon	S.C.E.C.	10,200	4/1/54	108
Volcanic Knob	S.C.E.C.	10,100	4/5/54	84
Heart Lake	S.C.E.C.	10,100	4/5/54	78
Rose Marie	S.C.E.C.	10,000	4/5/54	78
Colby Meadow	S.C.E.C.	10,000	4/5/54	66
Agnew Pass	C.E.P.C.	9,800	4/1/54	84
Dutch Lake	S.C.E.C.	9,100	4/5/54	78
Kaiser Pass	S.C.E.C.	9,000	4/5/54	108
Coyote Lake	S.C.E.C.	8,600	4/5/54	90
Twin Meadows	S.C.E.C.	8,400	4/1/54	60
String Meadow	S.C.E.C.	8,400	4/1/54	84
Cora Lakes	S.C.E.C.	8,200	4/1/54	102
Mammoth Pass	S.C.E.C.	9,200	4/1/54	138
Jackass Meadows	S.C.E.C.	7,200	4/1/54	69
Kings River				
Bishop Pass	C.E.P.C.	11,700	4/5/54	64
Blackcap Basin	S.C.E.C.	10,800	4/5/54	96
Upper Burnt Corral	S.C.E.C.	9,700	4/5/54	102
LAHONTAN AREA				
Mono Lake				
Donohue Pass	C.E.P.C.	10,800	4/1/54	84
Alger Lake	C.E.P.C.	10,500	4/1/54	54
Saddlebag Lake	C.E.P.C.	10,400	4/1/54	108
Slate Creek	C.E.P.C.	10,300	4/1/54	78
Warren Creek	C.E.P.C.	9,500	4/1/54	60
Convict Creek				
Lake Dorothy	L.A.D.W.P.	11,400	4/4/54	60
Rock Creek				
Mt. Morgan	L.A.D.W.P.	12,000	4/4/54	66
Rock Creek Lakes	L.A.D.W.P.	10,000	Data not received	
Big Pine Creek				
Big Pine Creek Basin	L.A.D.W.P.	11,500	4/4/54	60
Big Pine Lakes	L.A.D.W.P.	10,100	4/4/54	48
Bishop Creek				
Schober Pass	C.E.P.C.	12,300	4/5/54	12
Coyote Ridge	C.E.P.C.	11,700	4/5/54	96
Hungry Packer Lake	C.E.P.C.	11,300	4/5/54	120
Bishop Lakes	C.E.P.C.	11,300	4/5/54	72
Piute Pass	C.E.P.C.	11,000	4/5/54	54
Drunken Sailor	C.E.P.C.	11,000	4/5/54	84
George Lake	C.E.P.C.	10,600	4/5/54	42
Treasure Lake	C.E.P.C.	10,200	4/5/54	84

*C.E.P.C. - California Electric Power Company; S.C.E.C. - Southern California Edison Company; L.A.D.W.P. - Los Angeles Department of Water and Power.

TABLE 11 - AERIAL PHOTOGRAPHIC SNOW DEPTH MEASUREMENTS, APRIL 1, 1954, (Cont'd)

Area, Stream Basin and Name of Marker	Source of Data*	Elevation	Date of Measurement	Depth of Snow Inches
LAHONTAN AREA (Cont'd)				
Taboose Creek				
Taboose Pass	L.A.D.W.P.	11,200	4/4/54	66
Sawmill Creek				
Sawmill Pass	L.A.D.W.P.	11,400	4/4/54	96
Independence Creek				
Kearsarge Pass	L.A.D.W.P.	11,500	4/4/54	78
Onion Valley	L.A.D.W.P.	9,000	4/4/54	24
Cottonwood Creek				
Cottonwood Lakes	L.A.D.W.P.	11,200	4/4/54	66
Horseshoe Meadows	L.A.D.W.P.	11,100	4/4/54	36
Golden Trout Cabin	L.A.D.W.P.	10,600	4/4/54	36

*C.E.P.C. - California Electric Power Company; S.C.E.C. - Southern California Edison Company; L.A.D.W.P. - Los Angeles Department of Water and Power.

TABLE 12

WATER CONTENT OF MAJOR STORAGE RESERVOIRS

April 1

Watershed	Reservoir	Operator	10-year Mean 1944-53 (Acre-Feet)	Usable Capacity (Acre-Feet)	Water in Storage (Acre-Feet) 1953	Water in Storage (Acre-Feet) 1954	1954 Storage in Per Cent of 10-year Mean
NORTH COASTAL AREA							
Klamath River	Clear Lake 1/	U. S. Bureau of Reclamation	224,180	513,320	293,600	333,250	149%
	Gerber 1/	U. S. Bureau of Reclamation	46,180	94,270	76,900	73,110	158%
	Upper Klamath Lake 1/	U. S. Bureau of Reclamation	364,150	524,800	439,600	433,440	119%
Shasta River	Shasta R. (Dwinnell)	Montague Water Con. District	19,040	33,000	25,400	25,000	131%
South Eel River	Scott (Lake Pillsbury)	Pacific Gas & Electric Co.	85,850	93,720	80,100	79,260	92%
SAN FRANCISCO BAY AREA							
Conn Creek	Conn Creek Dam	City of Napa	2/	30,500	31,000	31,000	2/
San Pablo Creek	San Pablo Dam	East Bay M.U.D.	32,530	43,170	43,240	38,240	118%
San Leandro Creek	Upper San Leandro	East Bay M.U.D.	27,960	41,400	36,360	30,320	108%
	Chabot	East Bay M.U.D.	6,900	12,550	11,620	9,740	141%
Calaveras Creek	Calaveras	City & Co. of San Francisco	62,590	96,820	81,740	70,270	112%
Laguna Creek	Upper Crystal Springs	City & Co. of San Francisco)	54,255	58,380	51,310	50,930	94%
San Mateo Creek	Lower " ")						
San Andreas Creek	San Andreas	City & Co. of San Francisco	15,975	19,000	17,610	15,130	95%
Coyote Creek	Coyote	Santa Clara Valley Water	14,790	24,560	19,240	4,760	32%
	Leroy Anderson	Conservation District	2/	75,000	64,200	50,060	2/
Los Gatos Creek	Austrian	San Jose Water Works	2/	6,000	6,150	4,790	2/
	Lexington	Santa Clara Valley Water Conservation District	2/	25,000	7,400	6,700	2/
CENTRAL COASTAL AREA							
Salinas River	Salinas	San Luis Obispo County Flood Control and Water Conservation District	15,760	26,000	22,700	24,700	95%
Santa Ynez River	Gibralter	City of Santa Barbara	7,100	14,500	14,500	1,400	20%
	Cachuma	U. S. Bureau of Reclamation	2/	206,500	9,860	20,100	2/
SOUTH COASTAL AREA							
Bear Creek	Bear Valley	Bear Valley Mutual Water Co.	32,800	72,170	21,580	16,210	49%
San Jacinto River	Lake Hemet	Lake Hemet Water Company	5,120	13,400	4,550	2,460	48%
Temecula Creek	Vail	Vail Company	2/	49,500	11,730	7,020	2/
San Gabriel River	Morris	Metropolitan Water District	28,240	35,170	23,221	26,250	89%
Tributary Cajalco Cr.	Lake Mathews	Metropolitan Water District	86,800	100,000	87,165	95,120	110%
San Luis Rey River	Henshaw	Vista Irrigation District	78,710	194,320	14,760	15,660	20%
Boulder Creek	Cuyamaca	LaMesa, Lemon Grove & Spring Valley Irrigation District	32,788	11,600	470	2,540	8%
Sweetwater River	Lake Loveland	California Water & Telep. Co.	2/	25,250	6,990	3,800	2/
	Sweetwater (Main)	California Water & Telep. Co.	11,910	27,150	14,490	10,520	88%
City of San Diego	Municipal Reservoirs (10)	City of San Diego	171,830	399,530	129,870	107,200	62%

1/ Interstate reservoir used jointly by California and adjacent states.
2/ Less than 10 years of complete operation.

TABLE 12- WATER CONTENT OF MAJOR STORAGE RESERVOIRS AS OF APRIL 1 (Cont'd)

Watershed	Reservoir	Operator	10-year Mean 1944-53 (Acre-Feet)	Usable Capacity (Acre-Feet)	Water in Storage (Acre-Feet) 1953	Water in Storage (Acre-Feet) 1954	1954 Storage in Per Cent of 10-year Mean
CENTRAL VALLEY AREA							
Sacramento	Shasta	U. S. Bureau of Reclamation	2/	4,500,000	3,747,700	3,816,400	2/
Feather	Mountain Meadows	Pacific Gas & Electric Co.	17,110	24,000	17,780	23,950	140%
	Lake Almanor	Pacific Gas & Electric Co.	473,575	649,800	489,890	489,120	103%
	Bucks Storage	Pacific Gas & Electric Co.	71,634	101,700	71,160	71,970	100%
	Butt Valley	Pacific Gas & Electric Co.	39,780	49,900	44,510	42,930	108%
Yuba	Bowman Lake	Nevada Irrigation District	22,576	69,400	48,200	8,610	38%
	Scotts Flat	Nevada Irrigation District	2/	26,800	26,710	26,710	2/
	Spaulding System	Pacific Gas & Electric Co.	66,360	137,400	73,960	83,720	126%
Bear	Combie	Nevada Irrigation District	6,460	7,200	5,700	5,900	91%
American	Twin Lakes	Pacific Gas & Electric Co.	4,970	21,580	8,890	3,870	78%
	Silver Lake	Pacific Gas & Electric Co.	2,670	8,590	1,390	1,630	61%
Stony Creek	East Park	U. S. Bureau of Reclamation	42,730	50,800	50,660	50,550	118%
	Stony Gorge	U. S. Bureau of Reclamation	45,230	50,050	51,650	50,610	112%
Mokelumne	Salt Springs	Pacific Gas & Electric Co.	23,060	140,000	10,630	29,610	128%
	Pardee	East Bay M.U.D.	168,050	210,000	179,810	206,140	123%
Stanislaus	Relief	Pacific Gas & Electric Co.	5,100	15,550	3,540	100	2%
	Strawberry	Pacific Gas & Electric Co.	6,040	18,270	3,140	8,150	135%
	Melones	Pacific Gas & Electric Co.	62,160	112,600	44,020	69,060	111%
Tuolumne	Lake Eleanor	City & Co. of San Francisco	17,910	26,100	24,100	24,010	134%
	Hetch Hetchy	City & Co. of San Francisco	113,840	360,400	126,430	97,220	85%
	Don Pedro	Turlock & Modesto I. D.	201,380	260,000	167,600	192,370	96%
	Owen	Turlock I. D.	33,470	49,000	34,400	42,650	127%
	Dallas Warner	Modesto Irrigation District	16,650	27,000	19,170	20,640	124%
Merced	Lake McClure	Merced Irrigation District	168,640	280,900	107,800	173,000	103%
San Joaquin	Crane Valley	Pacific Gas & Electric Co.	29,855	45,400	19,590	18,400	62%
	Florence Lake	Southern Calif. Edison Co.	426	64,400	290	380	89%
	Huntington Lake	Southern Calif. Edison Co.	26,140	89,200	31,460	30,400	116%
	Shaver Lake	Southern Calif. Edison Co.	21,150	135,300	27,070	29,520	140%
	Millerton Lake (Friant)	U. S. Bureau of Reclamation	2/	520,500	313,400	316,500	2/
Kings	Pine Flat	U. S. Corps of Engineers	2/	1,100,000	0	58,630	2/
LAHONTAN AREA							
Truckee River	Lake Tahoe 1/	U. S. Bureau of Reclamation	425,260	732,000	552,000	582,000	137%
Little Truckee	Boca 1/	U. S. Bureau of Reclamation	7,950	41,050	6,210	6,500	82%
E. Walker River	Bridgeport 1/	Walker River I. D.	33,920	42,450	42,864	40,690	120%
Leevining Creek	Saddlebag Lake	Calif. Electric Power Co.	4,010	11,140	0	800	20%
Rush Creek	Gem Lake	Calif. Electric Power Co.	2,610	17,600	1,492	2,110	81%
	Grant Lake	City of Los Angeles	32,470	47,530	41,530	40,800	126%
Owens River	Long Valley (Lake Crowley)	City of Los Angeles	134,270	183,470	160,240	145,230	108%
	Tinemaha	City of Los Angeles	2,590	16,410	9,380	6,820	260%
Bishop Creek	Hillside (South Lake)	Calif. Electric Power Co.	4,130	13,190	1,805	0	0%
Rose Valley	Haiwee (South)	City of Los Angeles	49,660	58,530	45,650	42,840	86%
COLORADO DESERT AREA							
Colorado River	Lake Mead 1/	U. S. Bureau of Reclamation	17,558,500	27,207,000	17,764,000	15,701,000	89%

1/ Interstate reservoir used jointly by California and adjacent states.
2/ Less than 10 years of complete operation.

October 1, 1953 to March 31, 1954

Area, Stream, and Station	Source of Data 2/	Measured Acre-Feet	Unimpaired Runoff 3/		
			Computed Acre-Feet	Normal 4/ Acre-Feet	Computed Per Cent of Normal
NORTH COASTAL AREA					
Klamath River at Somesbar	USGS	5,000,000	5,270,120	3,071,660	172%
Russian River at Guerneville	USGS-PG&E	1,159,000	1,054,470	1,155,590	91%
SAN FRANCISCO BAY AREA					
Napa River near St. Helena	USGS	48,720	48,720	43,530	112%
Coyote Creek near Madrone	USGS	13,580	4,600	47,330	10%
CENTRAL COASTAL AREA					
Arroyo Seco near Soledad	USGS	31,220	31,220	101,640	31%
Huasna River near Santa Maria	USGS	3,090	3,090	17,240	18%
SOUTH COASTAL AREA					
Sespe Creek near Fillmore	USGS	22,310	23,450	66,170	35%
Arroyo Seco near Pasadena	USGS	2,160	2,160	5,680	38%
Santa Ana River near Mentone 5/	USGS	5,640	24,220	46,390	52%
CENTRAL VALLEY AREA					
Sacramento near Red Bluff	USGS	5,381,900	5,824,260	5,158,800	113%
Feather near Oroville	USGS	1,993,100	2,055,810	2,259,690	91%
Yuba at Smartville 6/	USGS-PG&E	751,880	934,610	1,130,490	83%
American at Fair Oaks	USGS-PG&E	1,016,700	921,650	1,220,480	76%
Mokelumne near Mokelumne Hill	USGS	254,600	172,400	236,010	73%
Stanislaus below Melones Power House	USGS	152,900	214,800	368,970	58%
Tuolumne at La Grange	USGS	468,100	408,580	563,040	73%
Merced at Exchequer	USGS	43,790	184,370	308,410	60%
San Joaquin below Friant	USGS-USBR	140,010	268,440	411,630	65%
Kings at Piedra 7/	USGS	174,400	233,030	349,600	67%
Kaweah near Three Rivers 8/	USGS	70,430	70,430	118,080	60%
Tule River near Porterville 8/	USGS	28,730	28,730	51,380	56%
Kern near Bakersfield 8/	KCLC	142,020	142,020	314,260	45%
LAHONTAN AREA					
Truckee River at Farad	FWT&CR	167,120	217,720	286,000	76%
Owens River near Round Valley	LADW&P	81,910	62,780	66,220	95%
COLORADO DESERT AREA					
Colorado River near Grand Canyon 8/	USGS-USBR	2,219,400	2,219,400	2,811,700 9/	79%

1/ All data preliminary, subject to revision.

2/ USGS - United States Geological Survey; PG&E - Pacific Gas & Electric Company; USBR - United States Bureau of Reclamation; KCLC - Kern County Land Company; FWT&CR - Federal Watermaster Truckee and Carson Rivers; LADW&P - Los Angeles Department of Water and Power.

3/ Corrected for upstream regulation.

4/ Computed for the 50-year period 1900-01 - 1949-50, inclusive.

5/ Uncorrected for Bear Valley Reservoir Operation.

6/ Total of Narrows Dam Spill, flow through Narrows Power House and Deer Creek near Smartville.

7/ Corrected for Pine Flat Operation Only.

8/ Uncorrected for upstream regulation.

9/ Based on the 30-year period 1922-23 - 1951-52, inclusive.

TABLE 14

GROUND WATER DATA

Spring 1954

Number on Map 1/	Area and Ground Water Unit	County	Source of Data 2/	Wells Reported	Depth to Ground Water Spring 1954 Feet: Maximum	Minimum 3/	Average	Average Change Ground Water Spring 1953 to Spring 1954 Feet
	NORTH COASTAL							
1	Scott River Valley	Siskiyou	D.W.R.	10	-	-	9.6	0.0
2	Shasta Valley	Siskiyou	D.W.R.	12	-	-	13.9	+ 0.2
3	Butte Valley	Siskiyou	D.W.R.	10	-	-	12.8	+ 1.3
4	Round Valley	Mendocino	U.S.G.S.	6	12.4	2.5	6.1	-
5	Laytonville Flats	Mendocino	U.S.G.S.	13	14.9	0.8	5.3	-
6	Little Lake Valley	Mendocino	U.S.G.S.	2	15.2	4.2	9.7	-
7	Potter Valley	Mendocino	U.S.G.S.	3	18.7	-0.5	6.5	- 1.5
8	Ukiah Valley	Mendocino	U.S.G.S.	5	14.8	1.1	6.5	- 1.3
9	Hopland Valley	Mendocino	U.S.G.S.	5	8.7	1.1	4.8	+ 1.7
	SAN FRANCISCO BAY							
10	San Pedro Creek	San Mateo	D.W.R.	5	9.0	1.4	4.7	+ 3.5
11	South Alameda County	Alameda	D.W.R.	20	67.1	4.4	38.1	- 3.5
12	Livermore Valley	Alameda	D.W.R.	12	161.6	7.2	69.0	-10.3
13	Half Moon Bay	San Mateo	D.W.R.	19	55.8	0.2	16.5	- 0.8
14	Santa Clara Valley	Santa Clara						
	South San Francisco Bay		D.W.R.	11	195.9	30.7	108.1	+15.6
	Santa Clara Valley Water Conservation District		S.C.V.W.C.D.	300	-	-	24.4	- 3.3
	Gilroy		D.W.R.	13	96.5	8.3	51.9	+10.7
15	San Gregorio Creek	San Mateo	D.W.R.	2	12.4	12.4	12.4	-11.0
16	Pescadero Creek	San Mateo	D.W.R.	7	15.6	4.5	9.0	+ 1.5
	CENTRAL COASTAL							
17	Scotts Creek	Santa Cruz	D.W.R.	4	75.3	37.6	62.7	-
18	Soquel Creek	Santa Cruz	D.W.R.	5	82.4	21.2	54.2	+ 5.7
19	Pajaro River	Monterey, Santa Cruz	D.W.R.	12	143.3	1.8	33.3	+ 5.4
20	Springfield School	Monterey	D.W.R.	3	184.4	84.2	139.1	- 7.1
21	Salinas Valley	Monterey	M.C.					
	Pressure Area							
	400 foot aquifer			34	13.9	4.2	7.6	+ 5.9
	180 foot aquifer			16	74.1	2.7	17.7	+ 3.2
	East Side Area) Forebay Area) Arroyo Seco Cone) Upper Valley)			170	275.0	6.0	72.7	-
22	Seaside	Monterey	D.W.R.	9	76.0	6.6	42.4	-
23	Carmel Valley	Monterey	D.W.R.	13	34.3	4.0	15.4	+ 2.8
24	Shandon	San Luis Obispo	D.W.R.	70	126.0	0	-	+ 3.0
25	Carrizo Plains	San Luis Obispo	D.W.R.	20	50.0	12.0	-	+ 0.5
26	San Luis Obispo Valley)	San Luis Obispo	D.W.R.	72	54.0	0	-	+ 2.0
27	Pismo Creek Valley)							
28	Arroyo Grande Valley	San Luis Obispo	D.W.R.	120	126.0	0	-	+ 3.0
29	Santa Maria Valley	Santa Barbara	D.W.R.	11	218.9	85.6	145.0	-
30	Cuyama Valley	Santa Barbara	D.W.R.	12	255.6	28.2	136.1	-

1/, 2/, 3/ See footnotes last page this table.

TABLE [illegible] - GROUND WATER DATA, SPRING 1954 (Con[illegible]d)

Number on Map 1/	Area and Ground Water Unit	County	Source of Data 2/	Wells Reported	Depth to Ground Water Spring 1954 Feet: Maximum	Minimum 3/	Average	Average Change Ground Water Spring 1953 to Spring 1954 Feet
	SOUTH COASTAL							
31	Ojai Valley	Ventura	C.S.V.C.	2	145.0	16.4	80.7	-25.6
32	Santa Clara River Valley	Ventura						
	Oxnard Plain (Pressure Area)		C.O., C.S.V.C. U.S.N.H.	3	54.0	14.6	31.0	+ 5.4
	Oxnard Forebay		C.S.V.C.	3	95.9	63.8	84.1	-18.4
	Santa Paula Basin		C.S.V.C.	2	85.4	75.0	80.2	- 6.9
	Fillmore Basin		C.S.V.C.	2	15.9	8.7	12.3	- 0.3
	Piru Basin		C.S.V.C.	2	155.6	77.7	116.6	-20.8
33	Pleasant Valley	Ventura	C.S.V.C.	3	91.6	40.3	68.6	+15.4
34	Las Posas Valley	Ventura	C.S.V.C.	2	275.0	181.8	228.4	- 6.2
35	Simi Valley	Ventura	C.S.V.C.	2	199.0	93.3	146.2	-13.4
36	San Fernando Valley	Los Angeles	L.A.D.W.P.	5	262.3	12.1	99.0	- 6.6
37	Coastal Plain, Los Angeles County	Los Angeles						
	West Coast Basin		C.E.S., D.W.C., C.H., R.O.C., T.W.A.O.C., C.S.C., L.A.C.F.C.D.	9	153.0	39.3	115.0	+ 2.8
	Central Coastal Plain Pressure Area		S.G.V.P.A., L.A.C.F.C.D.	5	147.8	47.4	85.8	- 5.9
	Los Angeles Forebay Area		L.A.C.F.C.D.	1	280.5	280.5	280.5	-12.4
	Montebello Forebay Area		S.G.V.P.A., C.W., L.A.C.F.C.D.	6	129.9	46.9	97.6	-14.5
38	San Gabriel Valley	Los Angeles						
	Main San Gabriel Basin		S.G.V.P.A.	5	292.8	87.6	170.8	-14.1
	Monk Hill Basin		C.P., R.C.L.W.A., V.W.C.	5	223.0	173.5	206.2	- 6.2
	Pasadena Sub-Area		C.P.	5	322.9	101.2	201.5	+ 1.1
	Santa Anita Sub-Area		C.S.M., C.A., D.W.R.	4	159.0	86.0	110.2	- 6.3
39	Coastal Plain, Orange County	Orange						
	East Coastal Plain Pressure Area		O.C.F.C.D., S.G.V.P.A.	8	114.5	37.1	63.4	+ 1.0
	Santa Ana Forebay Area		O.C.F.C.D.	5	195.5	59.1	148.3	- 9.4
	Irvine Basin		O.C.F.C.D.	1	134.9	134.9	134.9	- 6.9
40	Upper Santa Ana Valley							
	Chino Basin	San Bernardino and Riverside	S.B.C.F.C.D.	5	288.7	51.2	141.9	- 4.9
	Bunker Hill Basin	San Bernardino	G.C.C., S.B.V.W.C.D., R.W.C., S.B.W.D.	4	272.8	- 10.4	105.1	- 7.8
41	San Jacinto Basin	Riverside	R.C.F.C.D., D.W.R.	12	249.6	17.6	99.7	- 3.0
42	Santa Margarita Valley	San Diego	U.S.N.P.	5	20.1	6.1	11.2	- 2.2
43	San Luis Rey Valley	San Diego	C.O.O.	6	56.0	27.7	39.0	- 6.0
44	Temecula Valley	Riverside	V.C., D.W.R.	7	43.9	6.2	22.9	+ 1.3
45	Tia Juana Basin	San Diego	C.W.T.C., C.S., D.W.R.	3	23.4	12.2	16.8	+ 3.8
	CENTRAL VALLEY							
46	Sutter-Yuba Area	Sutter and Yuba	D.W.R.	225	55.9	3.8	20.6	- 0.8
47	Placer County	Placer	D.W.R.	52	87.2	0.0	38.3	- 2.6
48	Putah Creek							
	Putah Creek Cone	Yolo and Solano	D.W.R.	167	67.7	2.0	31.4	- 2.0
	Capay Valley	Yolo	D.W.R.	10	43.8	11.7	21.5	0.0

1/, 2/, 3/ See footnotes last page of this table.

TABLE 14 - GROUND WATER DATA, SPRING 1954 (Cont'd)

Number on Map[1]	Area and Ground Water Unit	County	Source of Data[2]	Wells Reported	Depth to Ground Water Spring 1954 Feet: Maximum	Minimum[3]	Average	Average Change Ground Water Spring 1953 to Spring 1954 Feet
	CENTRAL VALLEY (Cont'd)							
49	Lake County	Lake	D.W.R.	26	33.8	0.1	7.9	+ 1.4
50	Mokelumne River	San Joaquin	D.W.R.	29	70.1	3.1	42.0	- 1.5
51	Calaveras River	San Joaquin	D.W.R.	100	138.9	9.4	49.3	- 3.6
52	Tracy Area	San Joaquin	D.W.R.	14	166.4	12.4	78.9	-
53	Farmington-Collegeville Area	San Joaquin	D.W.R.	93	99.0	2.8	38.4	- 4.3
54	Oakdale Irrigation District	San Joaquin and Stanislaus	O.I.D.	120	140.0	- 0.7	64.5	- 1.2
55	Madera Irrigation District	Madera	M.I.D.	11	-	-	65.2	- 1.5
56	Fresno Irrigation District	Fresno	F.I.D.	65	-	-	37.2	- 3.3
57	Consolidated Irrigation District	Fresno	C.I.D.	81	-	-	30.5	- 3.2
58	Kaweah River Delta	Tulare	K.D.W.C.D.	197	-	-	72.7	+ 2.9
59	Tule River Area	Tulare	L.T.I.D., P.I.D., U.S.B.R.	84	-	-	98.3	+ 1.5
60	Delano-Famoso Area	Kern	U.S.B.R.	119	-	-	194.5	- 2.9
61	Kern River Delta	Kern	C.W.S.C.	36	-	-	85.4	- 3.9
62	Buttonwillow	Kern	B.V.W.S.D.	28	-	-	27.4	- 8.1
63	South of Arvin	Kern	A.E.W.S.D.	76	-	-	235.1	- 7.4
	LAHONTAN							
64	Lower Mojave River Valley	San Bernardino	S.B.C.F.C.D.	3	76.4	29.5	-	- 2.6
65	Middle Mojave River Valley	San Bernardino	S.B.C.F.C.D.	3	58.7	5.7	-	- 1.3
66	Upper Mojave River Valley	San Bernardino	S.B.C.F.C.D.	3	64.3	44.0	-	- 4.8
67	Antelope Valley	Los Angeles and Kern	L.A.C.F.C.D., D.W.R.	5	276.2	121.0	-	- 4.5
	COLORADO DESERT							
68	Coachella Valley	Riverside	C.V.C.W.D., D.W.R., P.S.W.C.	7	107.9	21.7	-	+ 2.3
69	Borrego Valley	San Diego	U.S.G.S.	7	140.7	9.2	-	- 3.5

1/ See map following page 19.

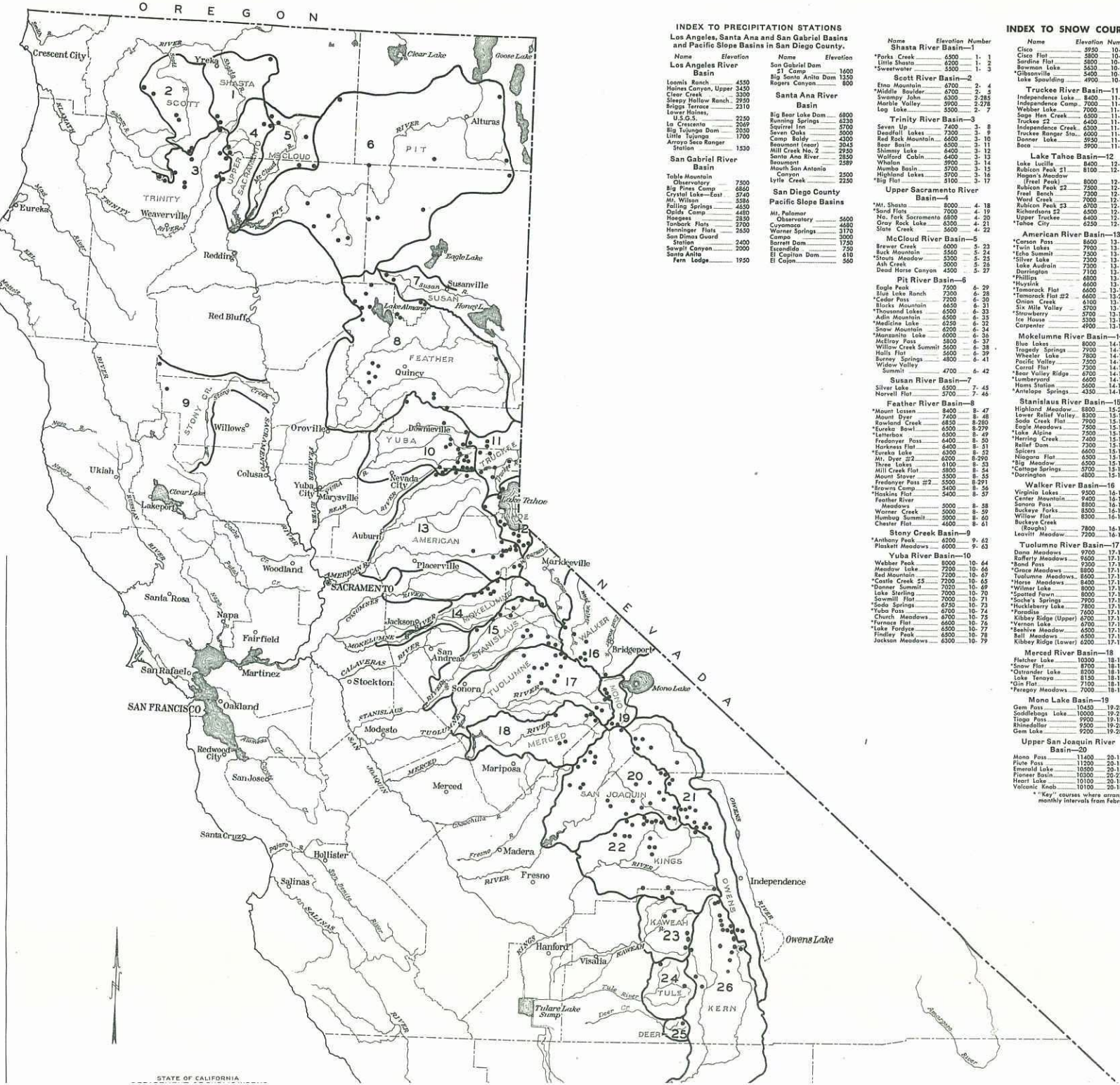
2/ D.W.R. - Division of Water Resources; U.S.G.S. - United States Geological Survey; S.C.V.W.C.D. - Santa Clara Valley Water Conservation District; M.C. - Monterey County; C.S.V.C. - County Surveyor, Ventura County; C.O. - City of Oxnard; U.S.N.H. - United States Navy, Construction Battalion Center, Port Hueneme; L.A.D.W.P. - Los Angeles Department of Water and Power; C.E.S. - City of El Segundo; D.W.C. - Dominguez Water Corporation; R.O.C. - Richfield Oil Corporation; T.W.A.O.C. - Tide Water Associated Oil Company; C.H. - City of Hawthorne; L.A.C.F.C.D. - Los Angeles County Flood Control District; C.S.C. - Columbia Steel Company; S.G.V.P.A. - San Gabriel Valley Protective Association; C.W. - City of Whittier; C.P. - City of Pasadena; R.C.L.W.A. - Rubio Canon Land and Water Association; V.W.C. - Valley Water Company; C.S.M. - City of Sierra Madre; C.A. - City of Arcadia; O.C.F.C.D. - Orange County Flood Control District; S.B.C.F.C.D. - San Bernardino County Flood Control District; G.C.C. - Gage Canal Company; S.B.V.W.C.D. - San Bernardino Valley Water Conservation District; R.W.C. - Riverside Water Company; S.B.W.D. - San Bernardino Water Department; R.C.F.C.D. - Riverside County Flood Control District; U.S.N.P. - United States Navy, Camp Joseph H. Pendleton; C.O.O. - City of Oceanside; V.C. - Vail Company; C.W.T.C. - California Water and Telephone Company, C.S. - Coronado System; O.I.D. - Oakdale Irrigation District; M.I.D. - Madera Irrigation District; F.I.D. - Fresno Irrigation District; C.I.D. - Consolidated Irrigation District; K.D.W.C.D. - Kaweah Delta Water Conservation District; L.T.I.D. - Lower Tule Irrigation District; P.I.D. - Porterville Irrigation District; U.S.B.R. - United States Bureau of Reclamation; C.W.S.C. - California Water Service Company; B.V.W.S.D. - Buena Vista Water Storage District; A.E.W.S.D. - Arvin Edison Water Storage District; C.V.C.W.D. - Coachella Valley County Water District; P.S.W.C. - Palm Springs Water Company

3/ (-) indicates flowing well.

TABLE 8

SUPPLEMENTAL SNOW SURVEY DATA - 1954 SEASON

AREAS, DRAINAGE BASINS, and SNOW COURSES	ELEVATION in FEET	DATE of SURVEY	DEPTH OF SNOW Inches	DENSITY Per Cent	WATER CONTENT Inches	NORMAL WATER CONTENT as of April 1 Inches
CENTRAL VALLEY AREA						
Feather River						
Mount Stover	5,500	4/8/54	48.5	46.2%	22.4	16.5
Kings River						
Rowell Meadow	9,200	4/2/54	89.0	34.9%	31.1	30.8
Big Meadows	7,660	4/5/54	71.4	40.3%	28.8	29.6
Horse Corral Meadow	7,600	4/2/54	57.6	40.6%	23.4	20.7
Kern River						
Round Meadow	9,000	4/7/54	72.8	40.3%	29.3	27.2
Ramshaw Meadows	8,800	4/2/54	37.4	32.4%	12.1	12.2
Little Whitney Meadows	8,500	3/30/54	50.4	52.5%	26.5	14.4
Bonita Meadows	8,400	4/6/54	37.5	42.2%	15.8	15.0
Casa Vieja Meadows	8,400	4/4/54	60.3	38.5%	23.2	20.4
Monache Meadows	8,000	4/3/54	20.7	36.2%	7.5	9.2
Beach Meadows	7,800	4/5/54	22.1	42.7%	9.4	11.0
COLORADO DESERT AREA						
Whitewater Basin						
Tahquitz Valley	7,800	3/8/54	28.6	50.2%	14.3	-



INDEX TO PRECIPITATION STATIONS

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

Name	Elevation
Los Angeles River Basin	
Loomis Ranch	4550
Haines Canyon, Upper	3450
Clear Creek	3300
Sleepy Hollow Ranch	2950
Briggs Terrace	2310
Lower Haines, U.S.G.S.	2250
La Crescenta	2069
Big Tujunga Dam	2050
Little Tujunga	1700
Arroyo Seco Ranger Station	1530
San Gabriel River Basin	
Table Mountain Observatory	7500
Big Pines Camp	6860
Crystal Lake—East	5740
Mt. Wilson	5386
Falling Springs	4650
Opids Camp	4480
Hoegees	2850
Tanbark Flats	2700
Henninger Flats	2650
San Dimas Guard Station	2400
Sawpit Canyon	2000
Santa Anita Fern Lodge	1950
San Gabriel Dam 21 Camp	1600
Big Santa Anita Dam	1350
Rogers Canyon	800
Santa Ana River Basin	
Big Bear Lake Dam	6800
Running Springs	6230
Squirrel Inn	5700
Seven Oaks	5000
Camp Baldy	4300
Beaumont (near)	3045
Mill Creek No. 2	2950
Santa Ana River	2850
Beaumont	2589
Mouth San Antonio Canyon	2500
Lytle Creek	2250
San Diego County Pacific Slope Basins	
Mt. Palomar Observatory	5600
Cuyamaca	4680
Warner Springs	3170
Campo	3000
Barrett Dam	1750
Escondido	750
El Capitan Dam	610
El Cajon	560

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
Swampy John	6300	2-285
Marble Valley	5900	2-278
Log Lake	5500	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
Mumba 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 Lake	6500	4- 21
Slate Creek	3600	4- 22
McCloud River Basin—5		
Brewer Creek	6000	5- 23
Buck Mountain	5560	5- 24
*Stouts Meadow	5300	5- 25
Ash Creek	5000	5- 26
Dead Horse Canyon	4500	5- 27
Pit River Basin—6		
Eagle Peak	7500	6- 29
Blue Lake Ranch	7300	6- 28
*Cedar Pass	7200	6- 30
Blocks Mountain	6650	6- 31
*Thousand Lakes	6500	6- 33
Adin Mountain	6500	6- 35
*Medicine Lake	6250	6- 32
Snow Mountain	6000	6- 34
*Manzanita Lake	6000	6- 36
McElroy Pass	5800	6- 37
Willow Creek Summit	5600	6- 38
Halls Flat	5600	6- 39
Burney Springs	4800	6- 41
Widow Valley Summit	4700	6- 42
Susan River Basin—7		
Silver Lake	6500	7- 45
Norvell Flat	5700	7- 46
Feather River Basin—8		
*Mount Lassen	8400	8- 47
Mount Dyer	7400	8- 48
Rowland Creek	6850	8-280
*Eureka Bowl	6500	8-279
*Letterbox	6500	8- 49
Fredonyer Pass	6400	8- 50
Harkness Flat	6400	8- 51
*Eureka Lake	6300	8- 52
Mt. Dyer #2	6200	8-290
Three Lakes	6100	8- 53
Mill Creek Flat	5800	8- 54
Mount Stover	5500	8- 55
Fredonyer Pass #2	5500	8-291
*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
Meadow Lake	7200	10- 66
Red Mountain	7200	10- 67
*Castle Creek #5	7200	10- 65
*Donner Summit	7000	10- 69
Lake Sterling	7000	10- 70
Sawmill Flat	7000	10- 71
*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

INDEX TO SNOW COURSES

Name	Elevation	Number
Cisco	5950	10- 80
Cisco Flat	5800	10- 81
Sardine Flat	5800	10- 82
Bowman Lake	5630	10- 83
*Gibsonville	5400	10-277
Lake Spaulding	4900	10- 85
Truckee River Basin—11		
Independence Lake	8400	11- 86
Independence Camp	7000	11- 88
Webber Lake	7000	11- 89
Sage Hen Creek	6500	11- 90
Truckee #2	6400	11- 92
Independence Creek	6300	11- 91
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
*Phillips	6800	13-113
*Huysink	6600	13-115
*Tamarack Flat	6600	13-116
*Tamarack Flat #2	6600	13-289
Onion Creek	6100	13-120
Six Mile Valley	5700	13-123
*Strawberry	5700	13-124
Ice House	5300	13-127
Carpenter	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
Hams Station	5600	14-136
*Antelope Springs	4350	14-137
Stanislaus River Basin—15		
Highland Meadow	8800	15-268
Lower Relief Valley	8300	15-138
Soda Creek Flat	7900	15-139
Eagle Meadows	7500	15-140
*Lake Alpine	7500	15-141
*Herring Creek	7400	15-142
Relief Dam	7300	15-143
Spicers	6600	15-144
Niagara Flat	6500	15-145
*Big Meadow	6500	15-146
*Cottage Springs	5700	15-147
*Dorrington	4800	15-149
Walker River Basin—16		
Virginia Lakes	9500	16-150
Center Mountain	9400	16-151
Sonora Pass	8800	16-152
Buckeye Forks	8500	16-153
Willow Flat	8300	16-154
Buckeye Creek (Roughs)	7800	16-155
Leavitt Meadow	7200	16-156
Tuolumne River Basin—17		
Dana Meadows	9700	17-157
Rafferty Meadows	9600	17-158
*Bond Pass	9300	17-159
*Grace Meadows	8800	17-160
Tuolumne Meadows	8600	17-161
*Horse Meadows	8400	17-162
*Wilmer Lake	8000	17-163
*Spotted Fawn	8000	17-164
*Sache's Springs	7900	17-165
*Huckleberry Lake	7800	17-166
*Paradise	7600	17-167
Kibbey Ridge (Upper)	6700	17-168
*Vernon Lake	6700	17-169
*Beehive Meadow	6500	17-171
Bell Meadows	6500	17-172
Kibbey Ridge (Lower)	6200	17-173
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		
Gem Pass	10450	19-281
Saddlebags Lake	10000	19-287
Tioga Pass	9900	19-181
Rhinedollar	9500	19-286
Gem Lake	9200	19-282
Upper San Joaquin River Basin—20		
Mono Pass	11400	20-182
Flute Pass	11200	20-183
Emerald Lake	10500	20-184
Pioneer Basin	10300	20-276
Heart Lake	10100	20-185
Volcanic Knob	10100	20-186
Rosemarie	10000	20-187
Colby Meadow	10000	20-188
Agnew Pass	9450	20-189
*Kaiser Pass	9200	20-190
Dutch Lake	9100	20-191
Coyote Lake	8600	20-192
Cora Lakes	8500	20-193
Nellie Lake	8250	20-194
*Vermillion 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 Meadow	7000	20-201
Chiquito Creek	6800	20-202
Beasore Meadows	6800	20-203
*Poison Meadow	6650	20-204
Owens River Basin—21		
Bishop Lake	11300	21-284
Cottonwood Lakes #2	11100	21-220
East Piute Pass	10800	21-212
Cottonwood Lakes #1	10600	21-221
George Lake	10500	21-283
Sawmill	10200	21-213
Rock Creek #3	10000	21-209
Big Pine Creek #1	10000	21-217
Big Pine Creek #3	9800	21-218
Big Pine Creek #2	9700	21-219
Mammoth Pass	9500	21-205
North Lake	9500	21-214
Rock Creek #2	9050	21-210
Minarettes #2	9000	21-206
South Fork	9000	21-215
Rock Creek #1	8700	21-211
Bishop Park	8500	21-216
Minarettes #1	8300	21-207
Mammoth #2	8300	21-208
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
East Corral Meadow	8200	22-234
*Sand Meadow	8050	22-235
*Big Meadows	7660	22-236
Horse Corral Meadows	7600	22-237
Bear Ridge	7400	22-238
Fred Meadows	7200	22-239
*Grant Grove	6600	22-240
*Cliff Camp	6300	22-241
Dinkey Sand Flat	5300	22-242
Kaweah River Basin—23		
Farewell Gap	9000	23-292
*Panther Meadow	8650	23-243
Hackett Meadow	8600	23-244
Mineral King	8000	23-245
*Giant Forest	6500	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 Pass	10700	26-254
Sandy Meadows	10700	26-275
Tyndall Creek	10600	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
Banita Meadows	8400	26-261
Casa Vieja Meadows	8400	26-262
Monache Meadows	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		
Ice House #2	8000	27-270
Ice House #3	7660	27-269
San Antonio #2	7060	27-268
Little Rock Creek Basin (Mojave Desert)—28		
Buckhorn	7100	28-271
Cedar Springs	6500	28-272
Squaw Camp	5800	28-273
Cottonwood Creek Basin—29 (San Diego County)		
Little Laguna Meadow	5200	29-274
San Jacinto Basin—30		
Cinco Pass	7500	30-293
Marion Mountain	6700	30-294
Thomas Mountain	6600	30-295
Whitewater Basin—31		
Tahquitz Valley	7800	31-296

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