

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WATER RESOURCES

EARL WARREN, 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

February 1, 1953



STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WATER RESOURCES

EARL WARREN, 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

February 1, 1953



WATERWAYS
OF
CALIFORNIA

LEGEND

- 1. Main Waterways
- 2. Tributaries
- 3. Canals
- 4. Lakes
- 5. Reservoirs
- 6. Dams
- 7. Diversion Works
- 8. Irrigation Works
- 9. Other Works

U.S. GEOLOGICAL SURVEY
WASHINGTON, D.C.

1910

1910

1910



TABLE OF CONTENTS

	<u>Page</u>
ORGANIZATION.....	iii
AGENCIES COOPERATING IN THE COLLECTION OF DATA CONTAINED IN THIS BULLETIN.....	iv
1. INTRODUCTION.....	1
Summary of Water Conditions.....	1
2. PRECIPITATION.....	8
3. SNOWPACK.....	10
4. SURFACE RESERVOIR STORAGE.....	12
5. STREAM FLOW.....	14

LIST OF TABLES

	<u>Page</u>
1. PRECIPITATION AND SNOWPACK WATER CONTENT PERCENTAGE OF NORMAL - FEBRUARY 1, 1953....	4
2. SNOWPACK DATA AT REPRESENTATIVE COURSES AS OF FEBRUARY 1, 1953.....	5
3. SUMMARY OF STORAGE IN MAJOR RESERVOIRS AS OF FEBRUARY 1, 1953.....	6
4. RUNOFF OF REPRESENTATIVE CALIFORNIA STREAMS - OCTOBER 1, 1952 - JANUARY 31, 1953.....	7

Appendix A - Basic Data

5. PRECIPITATION DATA - JULY 1, 1952 to FEBRUARY 1, 1953.....	A-1
6. SNOW SURVEY DATA AS OF FEBRUARY 1, 1953.....	A-8
7. AERIAL SNOW DEPTH MEASUREMENTS AS OF FEBRUARY 1, 1953.....	A-16
8. WATER CONTENT OF MAJOR STORAGE RESERVOIRS - FEBRUARY 1, 1953.....	A-18
9. RUNOFF DATA - OCTOBER 1, 1952 - JANUARY 31, 1953.....	A-20

Appendix B

RESULTS OF SNOW SURVEYS MADE DURING THE
PERIOD DECEMBER 31, 1952 TO JANUARY 22,
1953..... B-1

List of Plates

DRAINAGE AREAS IN CALIFORNIA..... Frontispiece
PRECIPITATION DISTRIBUTION AS OF
FEBRUARY 1, 1953..... PLATE 1

ORGANIZATION

FRANK B. DURKEE Director of Public Works
A. D. EDMONSTON State Engineer
GERALD H. JONES Assistant State Engineer

Activities covered by this report are under the direction

of

WALTER G. SCHULZ - Principal Hydraulic Engineer

Collection, correlation and analysis of data
and preparation of report

by

PAUL E. STEPHENSON Supervising Hydraulic Engineer
FRED A. STRAUSS Senior Hydraulic Engineer
JOSEPH I. BURNS Associate Hydraulic Engineer
DON R. MITCHELL Assistant Hydraulic Engineer
ROBERT W. MILLER Junior Civil Engineer
ARCHIE A. CHESLER Junior Civil Engineer
JOE NESSLER Senior Engineering Aid
JOHN L. JAMES Senior Delineator

T. R. MERRYWEATHER Administrative Officer

Agencies Cooperating in the Collection of Data Contained in this Report

Governmental Agencies

State

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

Federal

Department of Agriculture
Forest Service (14 National Forests)
Soil Conservation Service
Department of Commerce
Weather Bureau
Department of the Interior
Bureau of Reclamation
Geological Survey, Water Resources Division
National Park Service (3 National Parks)
Department of the Army
Corps of Engineers

Public Utilities

California Electric Power Company
Pacific Gas and Electric 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

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
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

Private Organizations

Kern County Land Company
The San Joaquin Canal Company

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 223, 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 participating in the California Cooperative Snow Surveys' program; by the operators of reservoirs which store water for future use; and by agencies responsible for the reporting of precipitation and runoff records. Agencies cooperating in the collection of precipitation, runoff, and snow survey data are listed immediately following the table of organization. The operators of reservoirs furnishing data for Table 8, entitled "Water Content of Major Storage Reservoirs," are named therein.

This report is the first of the 1953 series and sets forth the summary of water conditions as of February 1, 1953, including the results of all snow measurements, available precipitation records, stream flow data on representative water courses, and a statement of water in storage in major reservoirs. The various phases of water supply are discussed herein with respect to the drainage areas delineated on the Frontispiece of the report. Comments on the condition of ground water basins will be presented in the report issued subsequent to the April survey.

Summary of Water Conditions

Water conditions on February 1 on the portion of the State situated north of the latitude of the Tehachapi Mountains, with the exception of the southern part of the Lahontan Area, are generally satisfactory. The snow-

pack, the water impounded in reservoirs, and the general soil moisture conditions in those areas indicate normal or greater than normal water supply expectancy, assuming the occurrence of normal precipitation during the remainder of the 1952-1953 season.

The outlook for the southern portion of the Lahontan Area and the South Coastal Area is less favorable. Precipitation has averaged below normal for both areas, and carryover storage in the major reservoirs of the South Coastal Area is below the 10-year mean supply for February 1.

The distribution of precipitation in per cent of normal is shown on Plate 1 following page 3. Precipitation and snow pack percentages of normal by drainage areas are set forth in Table 1, page 4. It will be noted by reference thereto that precipitation varied from 160 per cent of normal in northern California to about 60 per cent of normal in southern California.

Snow pack throughout the Cascades and Sierra Nevada is considerably less than that of one year ago. However, the water content determined by actual measurements and by aerial photographs of snow depth markers indicates normal or better than normal snow pack conditions in most areas. Normal precipitation conditions for the remainder of the season will produce normal or above normal snowmelt runoff on streams in the North Coastal and Central Valley Areas. Under the extreme assumption of no additional precipitation during the remainder of the season, the indicated snowmelt runoff during the April-July period is 75 per cent of normal on snowfed streams in the North Coastal Area and from 50 to 60 per cent of normal in the Central Valley Area. A tabulation of representative snow measurements is set forth in Table 2, page 5.

Reservoir storage is in excess of normal throughout all areas of the State except the South Coastal. With a continuance of normal precipitation conditions, all reservoirs on streams tributary to the Central Valley Area may be expected to fill during the snowmelt period. A summary of the reservoir storage is set forth in Table 3, page 6.

Runoff of California streams during the four-month period, October 1, 1952, to February 1, 1953, has been in excess of normal in the area north of the latitude of San Francisco and in the Kern River watershed; slightly below normal along the western slope of the Sierra Nevada tributary to San Joaquin Valley; and generally deficient in the southern portion of the Lahontan Area and in the South Coastal Area. A summary of runoff in representative streams is shown on Table 4, page 7. Floods occurred during January on the Smith, Klamath, Trinity, Mad and Van Duzen Rivers in the North Coastal Area and on the Feather and Yuba Rivers in the Central Valley Area. Extreme stages and damaging overflow in upper Butte Basin along the Sacramento River were averted by retention of flood waters in Shasta Reservoir.

CALIFORNIA

PRECIPITATION DISTRIBUTION

AS OF
FEBRUARY 1, 1953

LEGEND

———— Percent of normal to date

ELEVATION IN FEET

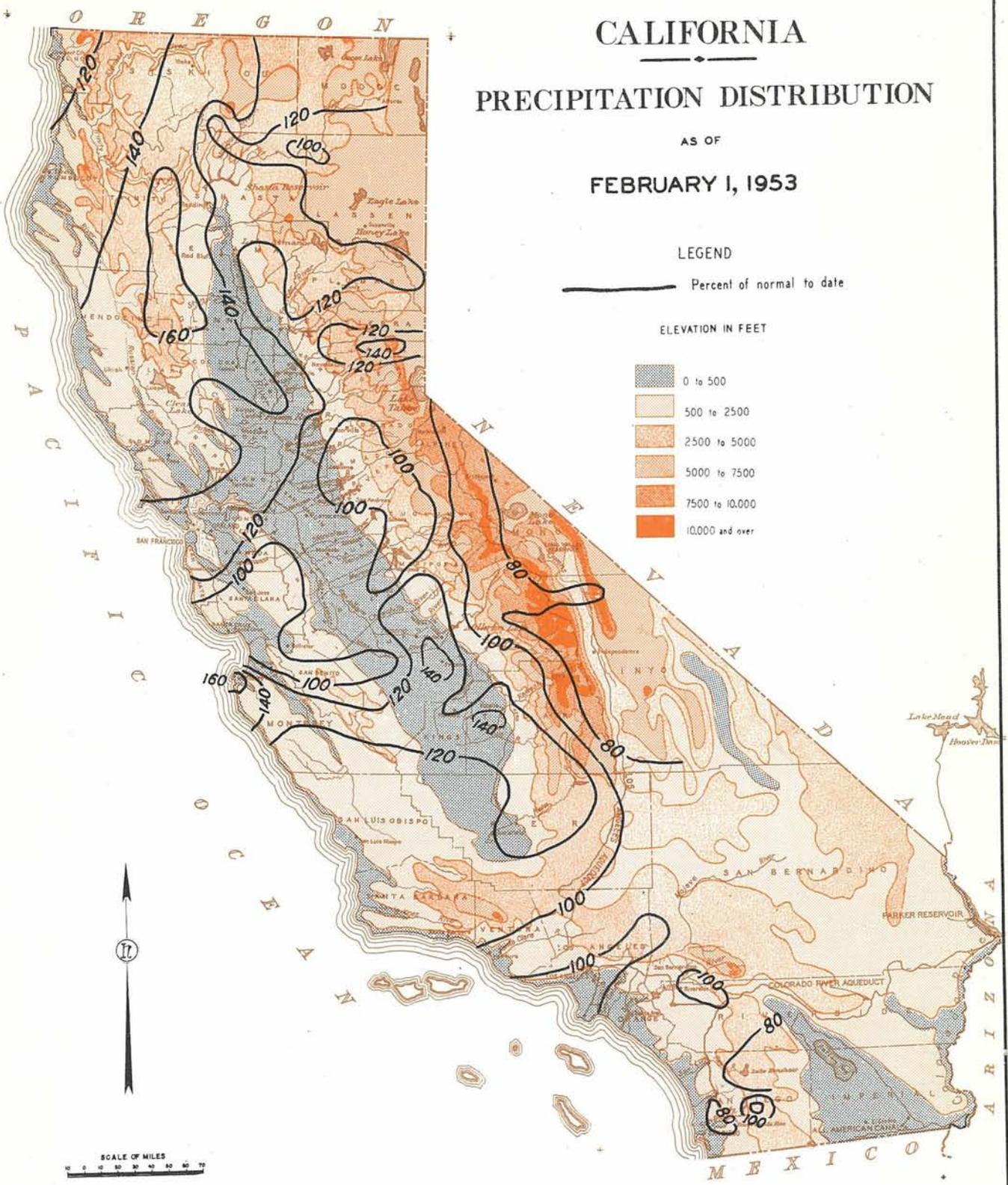
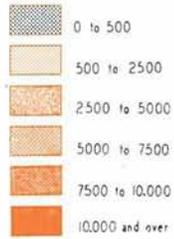


TABLE 1

PRECIPITATION AND SNOWPACK WATER CONTENT, PERCENTAGE OF NORMAL

February 1, 1953

<u>AREA</u>	<u>PERCENTAGE OF NORMAL</u>	
	<u>PRECIPITATION</u> July 1, 1952 to January 31, 1953	<u>SNOWPACK WATER</u> <u>CONTENT</u> on February 1
<u>NORTH COASTAL</u>	140%	160%
<u>SAN FRANCISCO BAY</u>	120%	-
<u>CENTRAL COASTAL</u>	110%	-
<u>SOUTH COASTAL</u>	90%	-
Los Angeles River Basin	80%	-
San Gabriel River Basin	85%	-
Santa Ana River Basin	95%	-
San Diego County	90%	-
<u>CENTRAL VALLEY</u>	115%	-
Upper Sacramento-McCloud and Pit River Basins	120%	140%
Feather River Basin	125%	160%
Yuba River Basin	125%	140%
American River Basin	115%	130%
Mokelumne River Basin	105%	125%
Stanislaus River Basin	95%	120%
Tuolumne River Basin	95%	115%
Merced River Basin	100%	115%
Upper San Joaquin River Basin	95%	120%
Kings River Basin	100%	130%
Kaweah River Basin	100%	125%
Kern River Basin	100%	105%
<u>LAHONTAN</u>	115%	-
Susan River Basin	115%	120%
Tahoe Lake Basin	110%	140%
Truckee River Basin	125%	160%
Owen River Basin	75%	110%
<u>COLÓRADO DESERT</u>	No Records Received	-

TABLE X

SNOWPACK DATA AT REPRESENTATIVE COURSES

As of ~~February~~ 1, 1953

April

Watershed and Snow Course	Elevation Feet	Date	Snow Depth Inches	Water Content Inches	April 1 Normal ^{1/}	Water Content At Same Time Last Year Inches
<u>Sacramento and Klamath</u> Mt. Shasta	8,000	3/26/53	129.4	55.1	56.2	68.3
		2/1/53	109.8	44.8	56.2	58.6
<u>Pit</u> Cedar Pass	7,200	4/2/53	40.9	16.6	20.7	34.1
		2/2/53	38.8	12.3	20.7	20.8
<u>Feather</u> Letterbox	5,600	4/1/53	122.6	60.0	62.3	105.8
		1/28/53	101.7	47.7	62.3	70.0
<u>Yuba and Truckee</u> Donner Summit	7,020	3/30/53	82.1	39.3	45.6	83.8
		1/28/53	85.1	34.2	45.6	60.3
<u>American and Lake Tahoe</u> Echo Summit	7,500	4/1/53	79.6	34.7	47.0	79.4
		2/2/53	88.1	28.1	47.0	59.4
<u>Mokelumme</u> Bear Valley Ridge	6,700	3/26/53	64.5	26.4	31.2	59.6
		1/27/53	66.5	28.0	31.2	45.6
<u>Stanislaus</u> Herring Creek	7,400	3/30/53	57.8	25.4	34.5	62.0
		1/28/53	64.7	24.7	34.5	36.5
<u>Tuolumne and Mono Lake</u> Tioga Pass	9,900	3/24/53	54.0	21.2	31.1	40.0
		1/31/53	52.3	18.6	31.1	29.5
<u>Merced</u> Snow Flat	8,700	4/3/53	75.4	35.0	48.7	72.3
		1/31/53	76.6	27.4	48.7	49.2
<u>Upper San Joaquin and Owens</u> Mammoth Pass	9,500	3/31/53	81.8	34.1	49.7	75.7
		2/3/53	76.6	29.6	49.7	54.2
<u>Kings</u> Sand Meadow Bishop Pass	11,400	4/3/53	64.5	24.4	39.1	57.6
	8,050	2/1/53	55.4	20.9	33.3	50.2
<u>Kaweah</u> Giant Forest	6,360	3/28/53	26.4	11.9	18.9	50.2
	6,500	1/29/53	42.1	17.2	18.9	35.3
<u>Tule</u> Quaking Aspen Kern	7,000	4/2/53	14.6	6.4	16.2	42.3
	9,000	2/1/53	53.2	16.5	27.6	38.4
<u>Quinn Ranger Station</u>	8,000	3/27/53	34.5	16.4	23.8	48.4

^{1/} These are computed 63-year normals for the period 1890-1952, inclusive.

TABLE 3

SUMMARY OF STORAGE
IN MAJOR RESERVOIRS
As of February 1, 1953

Area	Number of Reported Reservoirs	Total Capacity	Water in Storage (acre-feet)		Storage in Per Cent of Capacity		1953 Storage In Per Cent of 10-year Mean
			1952	1953	1953	10 year (1943-52) Mean <u>1/</u>	
North Coastal	5	1,259,110	511,930	825,360	66%	44%	150%
San Francisco Bay	9	401,380	375,260	354,710	88%	63%	140%
Central Coastal	2	40,500	40,900	37,200	92%	43%	214%
South Coastal	8	825,170	154,840	227,600	28%	44%	64%
Central Valley	29	8,088,550	5,641,910	5,225,470	65%	52%	125%
Lahontan Area	9	1,122,320	885,730	907,310	81%	61%	133%
Colorado Desert ^{2/}	<u>1</u>	<u>27,935,000</u>	<u>17,375,000</u>	<u>18,972,000</u>	<u>68%</u>	<u>69%</u>	<u>99%</u>
Total	63	39,672,030	24,985,570	26,549,650	67%	65%	103%

1/ This is computed from records for reservoirs in full operation, 10 years or longer.

2/ Data reported is for Lake Mead which regulates flow of the Lower Colorado River, the major source of water for the Colorado Desert Area.

TABLE 4

RUNOFF OF REPRESENTATIVE CALIFORNIA STREAMS

October 1, 1952 - January 31, 1953

<u>Area, Stream, and Station</u>	<u>Acre-Feet</u>		<u>Per Cent Normal</u>
	<u>Computed Unimpaired Runoff</u>	<u>Normal</u>	
<u>NORTH COASTAL AREA</u>			
Klamath River at Somesbar	2,990,000	1,745,000	171%
Russian River at Guerneville	1,335,430	666,400	200%
<u>SAN FRANCISCO BAY AREA</u>			
Napa River near St. Helena	65,250	19,700	331%
Coyote Creek near Madrone	12,870	14,400	89%
<u>CENTRAL COASTAL AREA</u>			
Arroyo Seco near Soledad	44,340	40,000	111%
<u>SOUTH COASTAL AREA</u>			
Arroyo Seco near Pasadena	904	2,140	42%
Santa Ysabel near Mesa Grande	806	3,480	23%
<u>CENTRAL VALLEY AREA</u>			
Sacramento River near Red Bluff	4,616,420	2,626,690	176%
San Joaquin River below Friant	163,900	181,510	90%
<u>LAHONTAN AREA</u>			
Owens River near Round Valley	42,340	45,800	92%
<u>COLORADO DESERT AREA</u>			
Colorado River at Grand Canyon	1,594,000 ^{1/}	1,784,300	89%

^{1/} Not corrected for upstream impairments.

SECTION 2 - PRECIPITATION

The first major storm of the 1952-1953 season occurred about mid-November. This storm and those during December were predominately cold. These were followed by storms during January which were generally of the warm type. Precipitation records for the period July 1, 1952, to January 31, 1953, are presented in Table 5. Seasonal distribution of precipitation as of February

1 among the drainage areas delineated on the Frontispiece, is as follows:

North Coastal Area

Seasonal precipitation in this area averaged about 140 per cent of normal, varying from 110 per cent at Crescent City to 162 per cent at Weaverville. Rainfall during the month of January varied from 109 per cent at Santa Rosa to 217 per cent at Crescent City. A considerable portion of the precipitation occurred during a severe flood producing storm in mid-January during which a total of 14.44 inches of rainfall was observed at Klamath in Del Norte County.

San Francisco Bay Area

Seasonal precipitation in this area averaged about 120 per cent of normal, varying from about 94 per cent at San Jose to 143 per cent at Napa. For the month of January only, precipitation was about 48 per cent of normal at San Jose and normal at Napa.

Central Coastal Area

Seasonal precipitation in this area averaged about 110 per cent of normal, varying from about 86 per cent at Santa Cruz to 142 per cent at Big Sur State Park south from Monterey. For January only, precipitation was 24 per cent at King City in the Salinas Valley, 58 per cent at Santa Cruz and 130 per cent at Big Sur State Park.

SECTION 3 - SNOWPACK

The water content of the California snowpack determined from snow course measurements and aerial photographs of snow depth markers indicate better than normal conditions on February 1. These data are presented in Table 6 and 7, respectively. 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. Advice from the State of Oregon indicates that the water content of the snowpack for the Upper Klamath River basin is in excess of normal for February 1. Snow surveys made at a few courses in California indicate the water content of the snowpack to be about 160 per cent of the normal for February 1. The snow line is at an elevation of about 4,000 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 watersheds of streams having their source in the San Gabriel and San Bernardino Mountains influences spring runoff during some years. Observation of conditions revealed that snow is located only in scattered patches above an elevation of 6,000 feet.

Central Valley Area

The water content of the snowpack varies from 140 per cent of normal in the Upper Sacramento, McCloud and Pit River basins to 105 per cent of

normal on the Kern River basin. The water content of the snowpack is considerably less than that of one year ago; however, normal, or above normal, runoff may be anticipated during the snowmelt period if normal precipitation conditions prevail for the remainder of the season.

The storms during November and December, 1952, were of the cold type bringing snow to low elevations. January storms were predominately of the warm type and precipitation fell in the form of rain to elevations of 8,000 feet on that portion of the area north of the San Joaquin River watershed. The prevailing warm weather during January resulted in a recession of the snow line to about 4,000 feet at Mount Shasta and 6,000 feet in Kern County.

Lahontan Area

The average water content of the snowpack varies from about 150 per cent of normal in the northern portion of the area to about 110 per cent of normal in the Owens River basin. The cold November and December storms deposited snow in excess of normal over the entire area. The warm January storms produced heavy precipitation on the northern portion of the area but only about 10 per cent of normal precipitation in the Owens River basin.

Colorado River Desert Area

Snow accumulating on the higher elevations of the watersheds of streams having their source in the San Jacinto Mountains influences spring runoff to a limited extent in some years. No measurements were received for this area.

SECTION 4 - SURFACE RESERVOIR STORAGE

Water impounded in major surface storage reservoirs utilized for conservation exceeds the 10-year mean as of February 1 in all areas except the South Coastal. A tabulation of water in storage in major California reservoirs as of February 1, 1953, is presented in Table 8.

Surface reservoir storage conditions in each of the drainage areas of California delineated on the Frontispiece are as follows:

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 66 per cent of the total capacity of 1,260,000 acre-feet, which represents about 150 per cent of the 10-year mean as of February 1. The reservoirs in California on Shasta and Eel Rivers will probably fill to capacity during the spring runoff period.

San Francisco Bay Area

Nine storage reservoirs located on streams tributary to San Francisco Bay have in storage about 88 per cent of their total capacity of 400,000 acre-feet, which represents 140 per cent of the 10-year mean as of February 1. Normal precipitation during the remainder of the rainfall season should provide sufficient runoff to fill these reservoirs. A portion of the water in storage has been imported from Sierra Nevada streams.

Central Coastal Area

Two reservoirs located in this area have in storage 37,200 acre-feet, which represents about 92 per cent of the total capacity.

South Coastal Area

Eight reservoirs in this area, for which reports have been received, hold in storage 227,000 acre-feet, which represents 28 per cent of their aggregate capacity and about 64 per cent of the 10-year mean as of

February 1. These reservoirs probably will not fill unless extremely heavy precipitation occurs during the remainder of the rainfall season. A portion of the water in storage has been imported from Colorado River.

Central Valley Area

Twenty-nine reservoirs in this area, from which reports are received, have in storage 5,225,000 acre-feet, which represents about 65 per cent of their aggregate storage capacity and 125 per cent of the 10-year mean storage as of February 1. These reservoirs should fill to capacity during the snowmelt period.

Lahontan Area

Nine reservoirs in this area, from which reports are received, have in storage about 81 per cent of their total capacity of 1,122,000 acre-feet, which represents about 133 per cent of the 10-year mean as of February 1. The water surface elevation at Lake Tahoe was 6,227.86 feet on February 1 as compared with 6,227.87 feet one year ago. These reservoirs in the aggregate will not fill to capacity, but should have storage equal to, or greater than, their 10-year mean storage at the end of the snowmelt period.

Colorado Desert Area

The Office of River Control, U. S. Bureau of Reclamation, Boulder City, Nevada, advises that the storage in Lake Mead on February 1 was 18,972,000 acre-feet, which is 99 per cent of average for the last 10 years.

SECTION 5 - STREAM FLOW

Flow in California streams was generally in excess of normal during November and December, 1952. Less than normal precipitation during January, 1953, resulted in below normal stream flow south of the latitude of San Francisco. High intensity storms during January caused floods of major proportions on streams in the northern parts of the North Coastal and Central Valley Areas. Runoff data for representative California streams are set forth in Table 9.

A summary of stream flow as it occurred, in each of the drainage areas of California delineated on the Frontispiece, is as follows:

North Coastal Area

The runoff in streams of this area during the first four months of the 1952-1953 season has been in excess of normal. Flow in Klamath River above Somesbar during that period was 171 per cent of normal and in the Russian River at Guerneville it was 200 per cent of normal.

It has been estimated by the Oregon Cooperative Snow Surveys that stream flow in the upper Klamath River basin will be 105 per cent of normal during the April-July runoff period. Data from a few snow courses on Klamath River tributaries in California indicate stream flow approaching normal without additional precipitation during the remainder of the season.

The first heavy runoff occurred on December 7 when moderately high stages in the Russian River caused minor overflow of unprotected bottom lands along that stream.

Intensive precipitation on January 16 and 17 produced extreme flood conditions on streams in Humboldt, Trinity and Del Norte Counties. Numerous lines of communication were damaged or destroyed and several communities and large acreages of agricultural land were inundated. Preliminary estimates of peak flood discharges at regularly established gaging

stations indicate that the maximum flows of record occurred at several locations, and that near record discharges for the past 50 years occurred generally throughout the area of heavy precipitation. Records of river stages in the area have been maintained only intermittently since first established about 1910. In the following tabulation are set forth the maximum stages and discharges for the flood of January 17 and 18, the previously recorded maxima and the number of years of record:

<u>River</u>	<u>Flood of Jan. 1953</u>		<u>Previous Maximum Flood</u>		<u>Years of Record</u>
	<u>Stage (feet)</u>	<u>Discharge (sec.ft.)</u>	<u>Stage (feet)</u>	<u>Discharge (sec.ft.)</u>	
Smith near Crescent City	38.0	141,000	39.5	152,000	21
Klamath near Klamath	43.8	280,000	34.0	197,000	18
Klamath at Somesbar	49.7	137,000	50.8	-	25
Salmon at Somesbar	19.3	41,000	15.8	29,900	29
Trinity near Hoopa	27.3	98,000	31.2	124,000	26
So. Fk. Trinity near Salyer	27.4	36,000	27.3	34,700	2
Mad near Arcata	26.2	75,000	19.5	43,300	5
Eel near Scotia	37.0	156,000	55.1	345,000	42
Van Duzen near Bridgeville	17.3	20,500	-	21,600	15

Larger floods are believed to have occurred at the foregoing stations during one or more of the water years 1862, 1890, 1915 and 1927.

San Francisco Bay Area

During the first four months of the 1952-1953 season the runoff of the streams in this area varied from 89 per cent of normal for the Coyote River to over 300 per cent of normal for the Napa River.

Intense precipitation on December 6 and 7 caused considerable local flooding along small streams draining into San Francisco Bay. Accelerated runoff from newly urbanized areas taxed the capacity of storm drainage facilities and high tides coincident with the peak rates of runoff caused overflow along the bay shore.

Central Coastal Area

The runoff of the streams in this area was generally below normal during the first four months of the 1952-1953 season attributable to

deficient precipitation during January. However, the flow in Arroyo Seco near Soledad was 110 per cent of normal for the period.

South Coastal Area

Deficient rainfall during January resulted in less than 50 per cent of normal runoff as of February 1 for streams in this area.

Central Valley Area

Runoff from streams of this area during the first four months of the 1952-1953 season varied from 90 per cent of normal on the San Joaquin River above Friant to 176 per cent of normal on the Sacramento River above Red Bluff.

Several storms during December 1952 produced moderate rises on the Sacramento River and its tributaries but no critical stages developed within the Sacramento River Flood Control Project. On December 7 a flow of approximately 45,000 second-feet was recorded on Putah Creek near Winters. This discharge is among the larger of record but is considerably less than the maximum flow of 70,000 second-feet recorded in February 1940.

The heavy runoff during December 1952 and the first half of January 1953 necessitated the operation of Shasta Reservoir for flood control in accordance with the provisions of the adopted storage and release regulations.

The heavy precipitation over the northern portion of the Sierra Nevada on January 7 and 8 produced a maximum discharge of about 110,000 second-feet in the Feather River near Oroville and caused the inundation of a small amount of unprotected land in the vicinity of the Gridley Bridge. Although this discharge was only about one-half the maximum recorded flow of March 1907, it was the greatest peak flow in Feather River since 1940.

The flows from Sacramento River tributaries south of the Feather River basin were not of significant magnitude. However, the runoff on the American River exceeded the capacity of the diversion tunnel at the Folsom

Dam site with resultant failure of a cofferdam and destruction of other construction facilities.

The mid-January flood produced moderately high stages throughout the Sacramento River Flood Control Project and flows over all Project weirs except Sacramento Weir. Flood control releases from Shasta Dam maintained moderately high river stages until the latter part of January when the required flood control reserve had been evacuated and normal reservoir operations were resumed. Little Holland Tract and Prospect Island tidal reclamations in the Yolo By-Pass were inundated during the early part of the flood period.

The maximum recorded flow of the Sacramento River at Redding in February 1940, prior to the construction of Shasta Dam, was nearly 200,000 second-feet and inundated much low-lying undeveloped land along both banks of the river near that city. The operating criteria for Shasta Dam and Reservoir provide for a maximum reservation of 1,300,000 acre-feet for flood control and regulation of the flow at Redding to a maximum of 80,000 second-feet. With that method of operation much of the land formerly in the flood plain is no longer subject to inundation. However, residential encroachments have been constructed on newly subdivided areas extending down to the level of a 50,000 second-foot flow in the river. Encroachment of 600,000 acre-feet into the flood control reservation on January 14, 1953, made mandatory the evacuation of storage space and the increase of releases to a maximum of 70,000 second-feet. This resulted in flooding several homes along the river bank between Redding and Anderson. The peak inflow to Shasta Reservoir had been about 110,000 second-feet during the flood of January 9 and its regulation materially reduced flood stages along Sacramento River and prevented damaging overflow into Upper Butte Basin.

A preliminary forecast of the snowmelt runoff in streams in this area with the assumptions of normal precipitation and no precipitation

during the period February through June is set forth in the following tabulation:

PRELIMINARY RUNOFF FORECASTS

February 1, 1953

Watershed and Station	April 1 - July 31, 1953		
	60-Year Normal (1889-90 - 1948-49) Acre-Feet	Unimpaired Runoff	
		With Normal Pre- cipitation for Feb.-June, 1953 Acre-Feet	Assuming No Precipitation for Feb.-June, 1953 Acre-Feet
Sacramento at Shasta Dam ^{1/}	1,879,000	2,200,000	1,100,000
Feather at Oroville	2,221,000	2,200,000	1,100,000
Yuba at Smartsville	1,210,000	1,300,000	700,000
American at Fair Oaks	1,535,000	1,700,000	825,000
Mokelumne at Mokelumne Hill	534,000	600,000	280,000
Stanislaus at Melones Dam	829,000	900,000	475,000
Tuolumne at La Grange	1,347,000	1,300,000	650,000
Merced at Exchequer	708,000	700,000	350,000
San Joaquin at Friant	1,369,000	1,300,000	700,000
Kings at Piedra	1,341,000	1,400,000	700,000
Kaweah at Three Rivers ^{1/}	297,000	300,000	150,000
Kern at Bakersfield ^{1/}	460,000	550,000	225,000

^{1/} Not corrected for upstream impairments.

Lahontan Area

The runoff of streams in this area during the first four months of the 1952-1953 season was generally in excess of normal, except in the southern portion of the area.

Present snowpack and normal precipitation during the remainder of the season should produce stream flow in excess of normal in the northern portion of the area and approximately normal runoff from the southern watersheds.

Colorado Desert Area

The office of River Control, U. S. Bureau of Reclamation, advises that the runoff of Colorado River near Grand Canyon between October 1, 1952 and February 1, 1953 has been 1,594,000 acre-feet which is 89 per cent of the 30-year mean flow.

A P P E N D I X A

TABLE 5

PRECIPITATION DATA

JULY 1, 1952 TO JANUARY 31, 1953

1	BASIN AND PRECIPITATION STATION	ELEVATION in FEET	PRECIPITATION DURING JANUARY, 1953		PRECIPITATION FROM JULY 1, 1952 TO JANUARY 31, 1953		2	Normal Seasonal Precipita- tion (July to June) Inches
			Total (Inches)	In per cent of Normal	Total (Inches)	In per cent of Normal		
<u>NORTH COASTAL AREA</u>								
	Crescent City	35	26.48	217%	46.68	42.26	110%	73.35
	Yreka	2625	5.55	186%	15.91	11.03	144%	18.17
	Eureka	43	12.63	189%	27.99	22.13	126%	39.39
	Weaverville	2030	12.51	186%	34.01	21.04	162%	35.62
	Fort Bragg	74	12.94	168%	32.45	22.49	144%	38.35
	Ukiah	650	13.68	174%	33.16	21.45	155%	36.29
	Santa Rosa	167	6.74	109%	24.36	16.99	143%	29.67
<u>SAN FRANCISCO BAY AREA</u>								
	Napa State Hospital	60	5.53	106%	19.64	13.71	143%	24.13
	San Francisco	52	3.26	72%	14.82	12.10	122%	20.92
	Redwood City	31	3.12	60%	16.18	12.86	126%	21.70
	San Jose	95	1.40	48%	7.43	7.88	94%	14.33
<u>CENTRAL COASTAL AREA</u>								
	Santa Cruz	125	3.53	58%	14.21	16.60	86%	29.08
	Hollister	284	1.40	52%	7.88	7.26	109%	13.35
	Salinas	74	0.96	33%	6.74	7.61	89%	13.90
	Big Sur State Park	300	9.77	130%	29.76	20.95	142%	38.69
	King City	320	0.56	24%	6.57	5.51	119%	10.44
	Paso Robles	740	1.71	51%	8.35	8.29	101%	15.67

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

2 These are computed 63 year normals for the period 1890-1952, inclusive. Where the periods of record are less than 63 years, the normals have been computed by comparison with the records of stations for which the actual 63 year data are complete. This gives all normals based upon the same period of years and comparable.

R.N.C. Record not complete.
N.R. No Report

TABLE 5 - PRECIPITATION DATA - JULY 1, 1952 TO JANUARY, 1953 (Cont'd)

1 BASIN AND PRECIPITATION STATION	ELEVATION in FEET	PRECIPITATION DURING JANUARY, 1953		PRECIPITATION FROM JULY 1, 1952 TO JANUARY 31, 1953		2 Normal Seasonal Precipitation (July to June) Inches
		Total (Inches)	2 Normal (Inches)	Total (Inches)	2 Normal (Inches)	
<u>CENTRAL COASTAL AREA (Cont'd)</u>						
Santa Maria	217	1.27	3.22	8.85	7.50	14.25
Santa Barbara	120	1.78	4.07	10.82	9.64	18.09
<u>SOUTH COASTAL AREA</u>						
<u>VALLEY STATIONS</u>						
Ventura	50	1.11	3.59	7.83	8.17	15.17
Los Angeles	312	1.08	3.09	7.65	7.78	14.83
San Bernardino	1094	1.85	3.14	9.12	8.52	16.86
Escondido	750	1.69	3.24	7.14	8.34	16.33
San Diego	19	0.58	2.02	4.61	5.58	10.26
El Capitan Dam	610	1.71	2.86	8.18	8.31	17.97
<u>BY MAJOR STREAM BASINS</u>						
<u>ICS ANGELES RIVER</u>						
Opids Camp	4480	2.16	8.20	15.76	19.96	40.47
Locinis Ranch	4050	0.89	4.06	8.71	10.63	20.55
Haines Canyon, Upper	3450	1.30	5.49	11.45	13.03	29.58
Clear Creek	3300	1.62	6.73	10.14	16.60	31.41
Sleepy Hollow Ranch	2950	1.12	6.18	10.76	15.53	31.18
Briggs Terrace	2310	1.66	5.20	11.62	14.12	29.01
Haines Canyon, Lower	2250	1.02	4.82	10.52	12.24	25.94
Big Tujunga Dam #1	2050	1.03	6.24	11.14	14.01	29.84
Arroyo Seco Ranger Station	1530	1.29	5.69	10.24	13.12	26.18
Little Tujunga Canyon	1440	1.54	4.33	8.39	10.24	19.90
<u>SAN GABRIEL RIVER</u>						
Table Mountain Observ.	7500	0.35	2.14	11.17	7.91	14.38
Big Pines Camp	6860	0.76	4.97	11.41	13.91	26.65
Mt. Wilson	5850	8.38	6.29	19.40	16.21	33.16
Crystal Lake, East	5740	2.34	8.34	15.20	20.40	39.91
Falling Springs	4650	1.42	6.94	12.75	17.09	33.41
Opids Camp	4480	2.16	8.20	15.75	19.96	40.47

1, 2 See footnotes first page of this table.

TABLE 5 - PRECIPITATION DATA - JULY 1, 1952 TO JANUARY, 1953 (Cont'd)

1	BASIN AND PRECIPITATION STATION	ELEVATION in FEET	PRECIPITATION DURING JANUARY, 1953		PRECIPITATION FROM JULY 1, 1952 TO JANUARY 31, 1953		2	Normal Seasonal Precipita- tion (July to June) Inches	
			Total (Inches)	In Per cent of Normal	Total (Inches)	In per cent of Normal			
<u>SAN GABRIEL RIVER (Cont'd)</u>									
	Camp Baldy	4300	1.49	6.07	25%	12.65	16.24	78%	33.71
	Hoogeess	2850	3.01	8.98	34%	18.39	21.70	85%	43.42
	Tenbark Flats	2700	1.62	6.46	25%	11.16	15.05	74%	30.15
	Henninger Flats	2650	1.39	5.91	24%	11.31	14.14	80%	28.94
	Mouth San Antonio Canyon	2500	1.76	5.35	33%	10.83	13.33	81%	27.07
	San Dinos Guard Station	2400	1.70	5.19	33%	10.61	13.09	81%	24.82
	Sawpit Canyon	2000	1.83	6.10	30%	12.01	15.04	80%	31.19
	Santa Anita Fern Lodge	1950	2.59	6.66	39%	14.96	17.94	83%	34.10
	San Gabriel Dam #1 Camp	1600	1.46	6.81	21%	12.15	15.50	78%	30.50
	Big Santa Anita Dam	1400	1.58	5.48	29%	11.34	12.98	87%	25.85
	San Dinos Dam	1350	1.59	5.48	29%	10.23	12.42	82%	23.74
	Rogers Canyon	800	1.50	5.24	29%	10.24	12.41	83%	23.58
<u>SANTA ANA RIVER</u>									
	Table Mountain Obser.	7500	0.35	2.14	16%	11.17	7.91	141%	14.38
	Big Pines Camp	6860	0.76	4.97	15%	11.41	13.91	75%	26.65
	Big Bear Lake Dam	6800	1.80	6.76	27%	18.72	18.82	99%	36.66
	Running Springs	6230	2.45	8.43	29%	17.86	21.84	82%	42.27
	Squirrel Inn	5700	2.78	7.49	37%	16.84	19.82	85%	42.42
	Camp Baldy	4300	1.49	6.07	25%	12.65	16.24	78%	33.71
	Beaumont P. P.	3045	1.99	3.83	52%	10.49	10.69	98%	22.39
	Mill Creek #2	2950	1.40	3.83	37%	10.41	10.97	95%	22.85
	Santa Ana River	2850	1.80	4.84	37%	12.77	13.10	97%	26.78
	Beaumont	2589	1.93	3.25	59%	10.37	9.18	113%	18.87
	Mouth San Antonio Canyon	2500	1.76	5.35	33%	10.83	13.33	81%	27.07
	Lytle Creek	2250	5.68	7.28	78%	16.76	17.56	97%	34.61
<u>PACIFIC COAST BASINS</u>									
<u>SAN DIEGO COUNTY</u>									
	Cuymaca	4680	2.12	6.83	31%	25.06	19.09	131%	39.09
	Julian	4220	3.20	5.58	57%	12.33	15.93	77%	31.36
	Warner Springs	3170	1.13	3.11	36%	7.09	9.77	73%	17.59

1, 2 See footnotes first page of this table.

TABLE 5 - PRECIPITATION DATA - JULY 1, 1952 TO JANUARY, 1953 (Cont'd)

1	BASIN AND PRECIPITATION STATION	ELEVATION in FEET	PRECIPITATION DURING JANUARY, 1953		PRECIPITATION FROM JULY 1, 1952 TO JANUARY 31, 1953		2 Normal Seasonal Precipita- tion (July to June) Inches		
			Total (Inches)	2 Normal (Inches)	In per cent of Normal	Total (Inches)		2 Normal (Inches)	In per cent of Normal
<u>PACIFIC COAST BASINS (Cont'd)</u>									
	Campos	3000	1.04	3.24	32%	8.26	9.85	84%	18.78
	Barrett Dam	1750	1.15	3.57	32%	8.47	9.13	93%	18.74
	El Cajon	560	0.58	2.62	22%	4.56	7.19	63%	14.02
<u>CENTRAL VALLEY AREA VALLEY STATIONS</u>									
	Redding	718	9.61	7.18	134%	32.29	21.17	153%	38.16
	Willows	136	2.63	3.66	72%	15.33	10.23	150%	17.62
	Winters	132	3.21	3.97	81%	16.96	9.97	170%	16.97
	Grass Valley	2690	12.96	10.41	124%	30.72	29.07	106%	53.96
	Nevada City	2570	13.31	9.76	136%	32.25	27.39	118%	51.09
	Sacramento	25	3.51	3.53	99%	12.88	9.57	135%	17.10
	Stockton	15	1.81	2.92	62%	8.30	7.94	105%	14.26
	Los Banos	125	0.40	1.76	23%	4.67	4.69	100%	8.61
	Merced	173	1.23	2.32	53%	6.21	6.18	100%	11.77
	Fresno	277	1.49	1.81	82%	7.26	4.97	146%	9.53
	Bakersfield	489	0.67	1.11	60%	3.89	2.93	133%	6.04
<u>BY MAJOR STREAM BASINS UPPER SACRAMENTO- FIT AND McCLOUD RIVERS</u>									
	Alturas	4460	1.99	1.58	126%	8.03	6.67	120%	12.22
	Bieber	4200	2.65	2.45	108%	10.18	9.04	113%	16.18
	Mount Shasta	3555	2.16	6.06	36%	24.26	19.44	125%	34.89
	Hat Creek	3400	2.59	3.17	82%	12.75	9.89	129%	18.00
	McCloud	3270	13.91	8.88	157%	39.61	28.34	140%	49.59
	Fall River Mills	3340	2.10	3.00	70%	9.57	10.33	93%	18.82
	Dunsmuir	2285	19.97	23.29	86%	43.07	38.74	111%	55.59
<u>FEATHER RIVER</u>									
	Sierraville	5000	5.56	5.01	111%	15.64	14.81	106%	25.97
	Mineral	4935	17.48	8.90	196%	36.12	30.15	120%	51.96
	Canyon Dam	4570	11.36	6.71	169%	29.24	20.94	140%	38.33

1, 2 See footnotes first page of this table.

TABLE 5 - PRECIPITATION DATA - JULY 1, 1952 TO JANUARY, 1953 (Cont'd)

1	BASIN AND PRECIPITATION STATION	ELEVATION in FEET	PRECIPITATION DURING JANUARY, 1953		PRECIPITATION FROM JULY 1, 1952 TO JANUARY 31, 1953		2Normal Seasonal Precipita- tion (July to June) Inches		
			Total (Inches)	2Normal (Inches)	In per cent of Normal	Total (Inches)		2Normal (Inches)	In per cent of Normal
<u>FEATHER RIVER (Cont'd)</u>									
	Chester	4550	8.69	6.02	14.4%	25.53	18.06	141%	31.82
	Doyle	4300	2.31	1.53	151%	7.94	6.38	124%	10.64
	Quincy	3409	11.25	7.43	151%	27.48	22.76	121%	40.53
	Lake Wilenor	2000	14.11	9.99	141%	33.50	30.51	110%	54.56
	Las Plumas	506	15.46	10.79	143%	34.30	27.99	123%	49.97
<u>YUBA RIVER</u>									
	Soda Springs	6870	14.29	9.41	152%	39.27	26.13	150%	48.41
	Lake Spaulding	4600	17.66	12.31	143%	44.61	35.57	125%	67.72
	Deer Creek	3700	15.25	13.46	113%	42.18	37.38	113%	69.19
	Downieville R. S.	2960	18.71	12.77	147%	45.19	36.99	122%	68.16
	Dobbins (Near)	1650	10.88	7.54	144%	24.06	22.62	106%	42.15
<u>AMERICAN RIVER</u>									
	Twin Lakes	7970	9.32	9.52	98%	28.38	24.34	117%	46.05
	Soda Springs	6870	14.29	9.41	152%	39.27	26.13	150%	48.41
	Blue Canyon A. S.	5272	19.10	11.65	164%	46.20	32.75	141%	60.79
	Colfax	2420	12.61	9.17	137%	28.70	25.53	112%	48.11
	Placerville	1924	9.00	7.73	116%	21.12	21.55	98%	40.89
<u>MOKELUMNE RIVER</u>									
	Twin Lakes	7970	9.32	9.52	98%	28.38	24.34	117%	46.05
	Tiger Creek	2400	8.68	8.57	101%	25.10	24.24	104%	46.27
	West Point	2326	7.00	7.30	96%	20.32	20.73	98%	40.11
	Electra	699	5.04	6.00	84%	15.14	16.46	92%	31.65
<u>STANISLAUS RIVER</u>									
	Calaveras Big Trees	4700	8.31	10.15	82%	26.47	27.71	96%	53.67
<u>TUOLUMNE RIVER</u>									
	Lake Eleanor	4650	7.26	8.35	87%	22.38	23.18	97%	44.67

1, 2 See footnotes first page of this table.

TABLE 5 - PRECIPITATION DATA - JULY 1, 1952 TO JANUARY, 1953 (Cont'd)

1	BASIN AND PRECIPITATION STATION	ELEVATION in FEET	PRECIPITATION DURING JANUARY, 1953		PRECIPITATION FROM JULY 1, 1952 TO JANUARY 31, 1953		Normal Seasonal Precipita- tion (July to June) Inches		
			Total (Inches)	In per cent of Normal	Total (Inches)	In per cent of Normal			
<u>TUOLUMNE RIVER (Con't)</u>									
	Hetch Hetchy	3530	5.28	6.13	86%	19.52	18.26	107%	35.77
	Groveland	2828	3.87	7.19	54%	17.36	19.91	87%	37.93
	Sonora	1825	4.99	6.20	80%	17.15	16.98	101%	33.12
<u>MERCED RIVER</u>									
	Yosemite	3960	5.80	6.39	91%	17.80	19.49	91%	36.56
	Mariposa	1932	4.40	6.43	68%	19.07	16.06	119%	30.61
<u>UPPER SAN JOAQUIN RIVER</u>									
	Huntington Lake	7000	4.28	5.45	79%	15.89	16.70	95%	32.41
	Big Creek	4900	3.05	5.52	55%	13.52	16.65	81%	32.82
	Crane Valley	3500	8.43	8.23	102%	24.84	21.98	113%	42.11
	North Fork	3000	5.53	6.74	82%	17.62	18.05	98%	34.83
	Auberry	2050	3.71	5.01	74%	13.24	13.53	98%	26.54
<u>KINGS RIVER</u>									
	Grant Grove	6775	6.49	6.61	98%	22.85	18.97	120%	42.56
	Balch Camp	1300	4.30	5.74	75%	13.35	14.21	94%	29.02
	Piedra	500	2.40	4.15	58%	10.35	9.41	110%	18.23
<u>KAWeah RIVER</u>									
	Grant Grove	6775	6.49	6.61	98%	22.85	18.97	120%	42.56
	Giant Forest	6360	7.29	7.99	91%	21.50	21.13	102%	44.49
	Ash Mountain	1600	3.60	4.66	77%	14.23	12.11	118%	26.44
<u>KERN RIVER</u>									
	Springville (Near)	4050	7.74	6.82	113%	22.88	17.82	128%	36.72
	Kern River #3 Intake	3640	4.66	3.71	126%	R.N.C.	9.18		R.N.C.
	Glennville	3300	3.59	3.59	100%	12.35	9.86	125%	20.76
	Kernville	2600	3.03	2.23	136%	8.25	5.62	147%	R.N.C.

1, 2 See footnotes first page of this table.

TABLE 5 - PRECIPITATION DATA - JULY 1, 1952 TO JANUARY, 1953 (Cont'd)

1 BASIN AND PRECIPITATION STATION	ELEVATION in FEET	PRECIPITATION DURING JANUARY, 1953			PRECIPITATION FROM JULY 1, 1952 TO JANUARY 31, 1953			2Normal Seasonal Precipita- tion (July to June) Inches)
		Total (Inches)	2Normal (Inches)	In per cent of Normal	Total (Inches)	2Normal (Inches)	In per cent of Normal	
<u>LAHONTON AREA</u>								
<u>VALLEY STATIONS</u>								
Fort Bidwell	4735	3.55	2.51	141%	11.23	8.23	136%	14.93
Susanville	4271	3.03	3.24	94%	10.87	10.24	106%	17.89
Truckee	6200	6.47	5.64	115%	20.57	14.77	139%	27.06
Bishop	4108	0.11	1.25	9%	2.08	3.45	60%	5.77
Independence	3957	0.22	1.02	22%	2.11	2.99	71%	4.70
<u>BY MAJOR STREAM BASINS</u>								
<u>TRUCKEE & TAHOE BASINS</u>								
Twin Lakes	7970	9.32	9.52	98%	28.38	24.34	117%	46.05
Soda Springs	6870	14.29	9.41	152%	39.27	26.13	150%	48.41
Tahoe	6230	6.77	6.34	107%	19.96	18.38	109%	32.97
Truckee	6200	6.47	5.64	115%	20.57	14.77	139%	27.06
<u>CARSON RIVER</u>								
Twin Lakes	7970	9.32	9.52	98%	28.38	24.34	117%	46.05
<u>MONO BASIN</u>								
Ellery Lake	9600	3.30	5.22	63%	12.98	15.77	82%	30.90
Gem Lake	9120	2.15	4.85	44%	8.81	14.03	63%	26.48
<u>OWENS BASIN</u>								
South Lake	9620	1.31	4.16	31%	7.95	10.34	77%	17.67
Lake Sabrina	9100	1.08	4.28	25%	8.61	10.46	82%	17.78
Crooked Creek	6700	0.82	2.29	36%	4.72	5.62	84%	R.N.C.
Big Pines Power House #3	5400	0.66	2.27	29%	3.23	5.07	64%	R.N.C.
Bishop	4450	0.11	1.25	9%	2.08	3.45	60%	5.77
Independence	3957	0.22	1.02	22%	2.11	2.99	71%	4.70
Haiwee	3800	0.14	1.47	10%	2.31	3.59	64%	6.12
Cottonwood Gates	3600	0.06	1.16	5%	2.35	3.09	76%	R.N.C.

COLORADO DESERT AREA
No Reports Received

1, 2 See footnotes first page of this table.

TABLE 6

SNOW SURVEY DATA

AS OF FEBRUARY 1, 1953

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 Con- tent For Entire Season (to April 1st) Inches	Percentage of Total Normal Water Content On Ground This Date	Corres- ponding Water Content 1952 Inches
<u>NORTH COASTAL AREA</u>								
<u>SCOTT RIVER</u>								
Middle Boulder #1	6700	1/24/53	68.6	45.9%	31.5	37.5	84%	-
Middle Boulder #3	6400	1/24/53	62.1	44.1%	27.4	30.1	91%	36.1
<u>SHASTA RIVER</u>								
Parks Creek	6500	1/30/53	93.1	39.9%	37.1	45.5	110%	54.1
Sweetwater	5500	1/30/53	52.6	39.1%	20.6	22.0	85%	27.6
<u>TRINITY RIVER</u>								
Big Flat	5100	1/1/53	45.3	42.4%	19.2	18.9	102%	28.3
<u>SAN FRANCISCO BAY AREA</u>								
No Surveys Made in These Areas								
<u>CENTRAL COASTAL AREA</u>								
<u>SOUTH COASTAL AREA</u>								
<u>CENTRAL VALLEY AREA</u>								
<u>UPPER SACRAMENTO RIVER</u>								
Mount Shasta	8000	2/1/53	109.8	40.8%	44.8	55.1	80%	58.6
Sand Flats	7000	2/1/53	95.6	40.6%	38.8	49.0	82%	51.0
Parks Creek	6500	1/30/53	93.1	39.9%	37.1	33.7	110%	54.1

1 Data for courses common to more than one basin are listed under each basin.

2 These are computed 63 year normals for the period 1890-1952, inclusive.

N.S.M. - No Survey Made.

TABLE 6 - SNOW SURVEY DATA AS OF FEBRUARY 1, 1953 (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		Percentage of Total Normal Seasonal Water Content On Ground This Date	Corres- ponding Water Content 1952 Inches
						Water Con- tent For Entire Season (to April 1st) Inches	Water Con- tent For Entire Season (to April 1st) Inches		
<u>CENTRAL VALLEY AREA (Cont'd)</u>									
<u>McCLOUD RIVER</u>									
Mount Shasta	8000	2/1/53	109.8	40.8%	44.8	55.1	56.2	80%	58.6
Stout's Meadow	5300	1/31/53	85.6	47.7%	40.8	51.1	49.1	83%	50.7
<u>PIT RIVER</u>									
Mount Lassen	8400	1/31/53	137.5	45.6%	62.7		97.4	64%	-
Cedar Pass	7200	2/2/53	38.8	31.6%	12.3		20.7	59%	20.8
Adin Mountain	6500	2/2/53	18.0	42.8%	7.7		14.3	54%	20.2
Thousand Lakes	6500	1/31/53	74.7	45.1%	33.7	42.0	47.5	71%	57.4
Manzanita Lake	6000	1/1/53	26.8	40.0%	10.7		9.1	118%	24.0
Stout's Meadow	5300	1/31/53	85.6	47.7%	40.8		49.1	83%	50.7
<u>STONY CREEK</u>									
Anthony Peak	6200	1/2/53	60.9	46.0%	28.0		32.1	87%	44.0
<u>FEATHER RIVER</u>									
Mount Lassen	8400	1/31/53	137.5	45.6%	62.7		97.4	64%	-
Yuba Pass	6700	2/1/53	63.0	42.5%	26.8	29.0	40.7	66%	54.1
Letterbox	5600	1/28/53	101.7	46.9%	47.7		62.3	77%	70.0
Eureka Bowl	6500	1/30/53	83.9	46.7%	39.1		62.7	62%	43.0
Eureka Lake	6300	1/30/53	68.0	44.6%	30.3		43.5	70%	-
Browns Camp	5400	1/28/53	57.9	49.3%	28.5	29.1	25.8	110%	43.0
Gibsonville	5400	1/1/53	72.3	47.9%	34.6		New Course 1950	101%	55.9
Haskins Flat	5400	1/29/53	70.3	51.7%	36.3	39.0	35.8	180%	54.8
Chester Flat	4600	1/21/53	39.6	37.6%	14.9		8.3		23.9
<u>YUBA RIVER</u>									
Castle Creek #5	7200	Measurement not received							60.3
Donner Summit	7020	1/28/53	85.1	40.2%	34.2		45.6	75%	60.3

1, 2 See footnotes first page of this table.

TABLE 6 -- SNOW SURVEY DATA AS OF FEBRUARY 1, 1953 (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 Con- tent For Entire Season (to April 1st) Inches	Percentage of Total Normal Seasonal Water Content On Ground This Date	Corres- ponding Water Content 1952 Inches
<u>CENTRAL VALLEY AREA (Cont)</u>								
<u>MOSELUNE RIVER</u>								
Highland Meadow	8800	2/3/53	90.1	42.0%	37.8			
Carson Pass	8600	1/29/53	67.0	37.9%	25.4	44.0	58%	
Emigrant Lake	8200	1/30/53	105.0	46.5%	48.8			
Twin Lakes	7900	1/31/53	65.6	39.9%	26.2	34.9	75%	
Tragedy Springs	7900	1/24/53	92.9	38.4%	35.7	40.5	70%	65.5
Wheeler Lake	7800	1/31/53	90.7	41.3%	37.5	61.8	61%	
Pacific Valley	7500	2/2/53	74.9	39.0%	29.2	42.8	68%	
Lake Alpine	7500	1/31/53	84.9	38.8%	32.9	45.8	72%	62.2
Silver Lake	7300	1/25/53	61.3	36.6%	22.4	26.7	84%	
Corral Flat	7300	1/24/53	79.8	41.7%	33.3	46.5	72%	61.9
Bear Valley Ridge	6700	1/27/53	66.5	42.1%	28.0	31.2	90%	45.6
Lumberyard	6600	2/2/53	71.3	42.0%	29.9	37.4	80%	54.7
Big Meadow	6500	1/29/53	73.5	39.7%	29.2	33.2	88%	51.6
Cottage Spring	5700	1/31/53	47.4	42.2%	20.0	13.3	150%	35.8
Hams Station	5600	2/2/53	20.1	47.7%	9.6	7.7	125%	29.8
Dorrington	4800	2/1/53	32.6	42.6%	13.9	6.7	207%	
Antelope Springs	4350	No Snow on Course				1.8		
<u>STANISLAUS RIVER</u>								
Highland Meadow	8800	2/3/53	90.1	42.0%	37.8			
Lake Alpine	7500	1/31/53	84.9	38.8%	32.9	45.8	72%	62.2
Pacific Valley	7500	2/2/53	74.9	39.0%	29.2	42.8	68%	
Herring Creek	7400	1/26/53	64.7	38.2%	24.7	34.5	72%	36.5
Spicers	6600	1/30/53	65.1	37.8%	24.6	33.2	74%	
Big Meadow	6500	1/29/53	73.5	39.7%	29.2	33.2		51.6
Cottage Spring	5700	1/31/53	47.4	42.2%	20.0	13.3	150%	
Dorrington	4800	2/1/53	32.6	42.6%	13.9	6.7	207%	29.8

1, 2 See footnotes first page of this table.

TABLE 6 -- SNOW SURVEY DATA AS OF FEBRUARY 1, 1953 (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		Percentage of Total Normal Seasonal Water Content On Ground This Date	Corres- ponding Water Content 1952 Inches
						Water Con- tent For Entire Season (to April 1st) Inches	Water Con- tent For Entire Season (to April 1st) Inches		
<u>CENTRAL VALLEY AREA (Cont'd)</u>									
<u>TUOLUMNE RIVER</u>									
Tioga Pass	9900	1/31/53	52.3	36.6%	18.6	31.1	60%	29.5	
Dena Meadows	9700	1/31/53	59.7	34.7%	20.7	34.1	61%	35.0	
Snow Flat	8700	1/31/53	76.6	35.8%	27.4	48.7	56%	49.2	
Paradise	7600	1/28/53	78.8	41.4%	32.6	49.2	66%	56.6	
Gin Flat	7100	1/26/53	70.3	42.5%	29.9	39.2	76%	46.4	
Vernon Lake	6700	1/28/53	63.8	37.9%	24.2	31.1	78%	39.5	
Beehive Meadow	6500	1/27/53	66.0	38.5%	25.4	29.8	85%	40.0	
<u>MERCED RIVER</u>									
Snow Flat	8700	1/31/53	76.6	35.8%	27.4	48.7	56%	49.2	
Ostrander Lake	8200	1/27/53	59.9	36.0%	21.6	42.7	51%	42.2	
Gin Flat	7100	1/26/53	70.3	42.5%	29.9	39.2	76%	46.4	
Peregoy Meadows	7000	1/26/53	56.8	35.5%	20.2	32.6	62%	42.9	
<u>UPPER SAN JOAQUIN RIVER</u>									
Mono Pass	11450	2/2/53	48.5	37.8%	18.3	34.9	52%	-	
Piute Pass	11200	2/1/53	58.7	39.3%	23.1	36.0	64%	-	
Emerald Lake	10800	1/26/53	57.4	34.2%	19.5	40.6	48%	-	
Pioneer Basin	10300	2/3/53	59.0	35.7%	21.1	41.8	50%	-	
Heart Lake	10100	1/22/53	58.4	31.7%	18.5	31.9	58%	28.7	
Volcanic Knob	10100	1/20/53	59.4	30.1%	17.9	34.7	52%	33.8	
Rose Marie	10000	1/21/53	58.9	27.8%	16.4	33.4	49%	32.0	
Colby Meadow	10000	1/26/53	47.3	33.2%	15.7	25.5	70%	-	
Mammoth Pass	9500	2/3/53	76.6	38.6%	29.6	49.7	60%	54.2	
Agnew Pass	9450	1/25/53	61.4	34.9%	21.4	34.8	61%	43.2	
Kaiser Pass	9200	1/20/53	68.9	34.4%	23.7	42.7	56%	-	
Dutch Lake	9100	1/28/53	53.4	33.7%	18.0	31.3	57%	34.1	
Coyote Lakes	8600	1/20/53	58.1	32.6%	18.9	35.8	53%	-	

1, 2 See Footnotes first page of this table.

TABLE 6 - SNOW SURVEY DATA AS OF FEBRUARY 1, 1953 (Cont'd)

AREAS, DRAINAGE BASINS, and SNOW COURSES	ELEVATION in FEET	DATE of SURVEY	DEPTH OF SNOW Inches	DENSITY Per Cent	WATER CONTENT Inches	Normal		Percentage of Total Normal Seasonal Water Content On Ground This Date	Corres- ponding Water Content 1952 Inches
						Water Con- tent For Entire Season (to April 1st) Inches	2		
<u>CENTRAL VALLEY AREA (Cont'd)</u>									
<u>UPPER SAN JOAQUIN RIVER (Cont'd)</u>									
Cora Lakes	8500	1/25/53	73.5	36.1%	26.5	27.2	40.4	66%	-
Nellie Lake	8250	1/22/53	71.4	36.8%	26.3	29.6	39.4	67%	-
Vermillion Valley	7500	1/19/53	41.8	30.6%	12.8	17.7	14.3	90%	19.8
Chilkoot Lake	7450	1/27/53	68.8	41.7%	28.7	32.2	44.6	64%	58.2
Chilkoot Meadow	7250	1/27/53	68.1	42.3%	28.8	27.0	42.9	67%	55.2
Florence Lake	7200	1/28/53	30.5	32.8%	10.0	6.9	8.9	112%	16.9
Huntington Lake	7000	1/21/53	45.5	37.8%	17.2	14.7	23.8	72%	-
Clover Meadow	7000	1/26/53	56.1	37.3%	20.9	19.4	27.0	77%	-
Jackass Meadows	7000	1/26/53	55.1	38.3%	21.1	16.1	25.0	84%	-
Chiquito Creek	6800	1/26/53	55.0	37.8%	20.8	19.3	23.9	87%	-
Beasore Meadow	6800	1/27/53	58.1	42.7%	24.8	23.1	32.0	78%	-
Poison Meadow	6650	1/27/53	56.3	42.6%	24.0	22.3	27.3	88%	46.6
<u>KINGS RIVER</u>									
Sand Meadow	8050	2/4/53	55.4	37.7%	20.9		33.3	63%	50.2
Big Meadows	7660	2/1/53	53.0	37.9%	20.1		31.1	65%	46.2
Grant Grove	6660	2/1/53	42.8	38.6%	16.5		15.8	104%	35.3
Cliff Camp	6500	2/3/53	30.2	43.0%	13.0		15.5	84%	36.0
<u>KAWEAH RIVER</u>									
Panther Meadow	8650	1/29/53	66.4	38.5%	26.4		40.2	66%	60.1
Big Meadows	7660	2/1/53	53.0	37.9%	20.1		31.1	65%	46.2
Giant Forest	6360	1/29/53	42.1	40.8%	17.2		18.9	91%	35.3
<u>KERN RIVER</u>									
Round Meadow	9000	2/1/53	53.2	31.0%	16.5		27.6	60%	38.4
<u>LAHONTAN AREA</u>									
<u>TRUCKEE RIVER</u>									
Donner Summit	7020	1/28/53	85.1	40.2%	34.2		45.6	75%	60.3
Sage Hen Creek	6500	2/1/53	46.9	36.7%	17.2		21.0	82%	35.4

1, 2 See footnotes first page of this table.

TABLE 6 - SNOW SURVEY DATA AS OF FEBRUARY 1, 1953 (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		Percentage of Total Normal Seasonal Water Content On Ground This Date	Corres- ponding Water Content 1952 Inches
						Water Con- tent For Entire Season (to April 1st) Inches	Water Con- tent For Entire Season (to April 1st) Inches		
<u>LAHONTAN AREA (Cont'd)</u>									
<u>TRUCKEE RIVER (Cont'd)</u>									
Tahoe City	6250	1/31/53	34.2	42.7%	14.6	14.0	17.1	85%	28.5
Truckee Ranger Station	6000	2/3/53	34.9	38.4%	13.4		9.6	140%	26.3
Donner Lake	5950	2/1/53	53.4	38.6%	20.6	25.4	26.0	79%	39.7
Boca	5900	1/29/53	23.2	40.5%	9.4		5.3	177%	18.2
<u>LAKE TAHOE</u>									
Echo Summit	7500	2/2/53	88.1	31.8%	28.1	34.7	47.0	60%	59.4
Dagetts Pass (In Nevada)	7350	1/31/53	32.6	36.5%	11.9	12.4	14.5	82%	-
Richardson #2	6500	1/31/53	47.4	33.8%	16.0	20.0	19.1	84%	31.9
Upper Truckee	6400	1/31/53	30.7	37.1%	11.4	9.3	11.1	103%	22.0
Tahoe City	6250	1/31/53	34.2	42.7%	14.6		17.1	85%	28.5
<u>CARSON RIVER</u>									
Carson Pass	8600	1/29/53	67.0	37.9%	25.4		44.0	58%	-
<u>MONO LAKE</u>									
Gem Pass	10450	1/27/53	53.9	38.3%	20.7	23.0	31.4	66%	41.2
Saddle Bags Lake	10000	1/30/53	62.0	34.1%	21.2	26.9	37.2	57%	38.6
Tioga Pass	9900	1/31/53	52.3	36.6%	18.6	21.2	31.1	60%	29.5
Dana Meadows	9700	1/31/53	59.7	34.7%	20.7		34.1	61%	35.0
Rhinedollar Lake	9500	1/30/53	55.7	35.1%	19.6	24.3	34.0	58%	36.4
Agnew Pass	9450	1/25/53	61.4	34.9%	21.4	23.1	34.8	61%	43.2
Gem Lake	9200	1/27/53	53.5	34.2%	18.3	19.6	30.7	60%	40.6
<u>OWENS RIVER - UPPER OWENS</u>									
Mammoth Pass #1	9500	2/3/53	76.6	38.6%	29.6		49.7	60%	54.2
Minarettes #2	9000	2/3/53	59.3	38.4%	22.8	25.7	35.9	64%	44.7
Minarettes #1	8300	2/3/53	42.3	38.8%	16.4	14.4	24.0	68%	31.9
Mammoth Pass #2	8300	2/3/53	40.0	38.5%	15.4	16.0	23.8	65%	32.2

1, 2 See footnotes first page of this table.

TABLE 6 - SNOW SURVEY DATA AS OF FEBRUARY 1, 1953 (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		Percentage of Total Normal Seasonal Water Content On Ground This Date	Corres- ponding Water Content 1952 Inches
						Water Con- tent For Entire Season (to April 1st) Inches	Water Content 1952 Inches		
<u>LAHONTAN AREA (Cont'd)</u>									
<u>ROCK CREEK</u>									
Mono Pass	11450	2/2/53	48.5	37.8%	18.3	34.9	52%	-	-
Rock Creek #3	10000	2/2/53	31.4	33.8%	10.6	16.0	66%	23.5	23.5
Rock Creek #2	9050	2/2/53	27.1	31.0%	8.4	10.9	77%	18.8	18.8
Rock Creek #1	8700	2/2/53	23.3	30.9%	7.2	10.2	71%	17.9	17.9
<u>BISHOP CREEK</u>									
Piute Pass	11200	2/1/53	58.7	39.3%	23.1	36.0	64%	-	-
East Piute Pass	10800	2/1/53	29.2	36.6%	10.7	19.6	55%	-	-
North Lake	9500	2/1/53	Patches Only		5.1	11.5	-	-	-
Bishop Park	8500	2/1/53	Trace		6.3	6.3	-	-	-
<u>BIG PINE CREEK</u>									
Big Pine Creek #1	10000	2/2/53	44.2	31.7%	14.0	26.4	53%	39.1	39.1
Big Pine Creek #3	9800	2/2/53	32.7	31.5%	10.3	18.7	55%	26.7	26.7
Big Pine Creek #2	9700	2/2/53	36.5	30.4%	11.1	18.8	59%	33.5	33.5

TABLE 7

AERIAL SNOW DEPTH MEASUREMENTS

As of February 1, 1953

<u>Area, Stream Basin and Name of Marker</u>	<u>Elevation</u>	<u>Date of Measurement</u>	<u>Depth of Snow Inches</u>
<u>CENTRAL VALLEY AREA</u>			
<u>TUOLUMNE RIVER</u>			
Dana Meadows	9,700	1/16/53	61
<u>SAN JOAQUIN RIVER</u>			
Humphreys Basin	11,700	12/13/52	20
Humphreys Basin	11,700	1/4/53	39
Humphreys Basin	11,700	1/21/53	42
Pioneer Basin	10,500	12/13/52	36
Pioneer Basin	10,500	1/4/53	48
Pioneer Basin	10,500	1/21/53	66
Emerald Lake	10,500	12/13/52	24
Emerald Lake	10,500	1/4/53	36
Emerald Lake	10,500	1/21/53	60
Island Pass	10,300	1/16/53	65
Bench Canyon	10,200	1/16/53	72
Volcanic Knob	10,100	12/13/52	24
Volcanic Knob	10,100	1/4/53	42
Volcanic Knob	10,100	1/21/53	60
Heart Lake	10,100	12/13/52	30
Heart Lake	10,100	1/4/53	42
Heart Lake	10,100	1/21/53	60
Rose Marie	10,000	12/13/52	24
Rose Marie	10,000	1/4/53	42
Rose Marie	10,000	1/21/53	52
Colby Meadow	10,000	12/13/52	24
Colby Meadow	10,000	1/4/53	36
Colby Meadow	10,000	1/21/53	46
Agnew Pass	9,800	1/16/53	64
Dutch Lake	9,100	12/13/52	30
Dutch Lake	9,100	1/4/53	42
Dutch Lake	9,100	1/21/53	52
Kaiser Pass	9,000	1/4/53	44
Kaiser Pass	9,000	1/21/53	66
Coyote Lakes	8,600	12/13/52	36
Coyote Lakes	8,600	1/4/53	44
Coyote Lakes	8,600	1/21/53	66
Twin Meadows	8,400	12/13/52	27
Twin Meadows	8,400	1/4/53	36
Twin Meadows	8,400	1/21/53	42
String Meadow	8,400	12/13/52	36
String Meadow	8,400	1/4/53	46
String Meadow	8,400	1/21/53	60
Mammoth Pass	8,200	1/16/53	88
Jackass Meadow	7,200	1/16/53	54

TABLE 7 - AERIAL SNOW DEPTH MEASUREMENTS - AS OF FEBRUARY 1, 1953 (Cont'd)

<u>Area, Stream Basin and Name of Marker</u>	<u>Elevation</u>	<u>Date of Measurement</u>	<u>Depth of Snow Inches</u>
<u>KINGS RIVER</u>			
Bishop Pass	11,700	1/21/53	48
Pinchot Pass	11,500	1/21/53	32
Bubbs Canyon	11,500	1/21/53	36
Palisade Basin	11,000	1/21/53	66
Bullfrog Lake	11,000	1/21/53	48
Blackcap Basin	10,800	1/21/53	84
Granite Basin	10,400	1/21/53	74
Scenic Meadow	10,200	1/22/53	48
Woodchuck Meadows	9,100	1/21/53	88
<u>KAWEAH RIVER</u>			
Hockett Meadow	8,500	1/22/53	56
<u>KERN RIVER</u>			
Bighorn Plateau	11,500	1/22/53	36
Siberian Plateau	11,000	1/22/53	36
Kaweah Plateau	11,000	1/22/53	60
Rattlesnake Creek Basin	10,500	1/22/53	48
Chagoopa Plateau	10,200	1/22/53	48
Round Meadow	9,000	1/22/53	54
Ramshaw Meadow	8,800	1/22/53	24
Quinn Ranger Station	8,500	1/22/53	42
<u>LAHONTAN AREA</u>			
<u>MONO LAKE</u>			
Coyote Ridge	11,700	1/21/53	66
Donohue Pass	10,800	1/16/53	56
Alger Lake	10,500	1/16/53	34
Saddlebag Lake	10,400	1/16/53	100
Slate Creek	10,300	1/16/53	72
<u>BISHOP CREEK</u>			
Schober Pass	12,300	1/21/53	24
Bishop Lakes	11,300	1/21/53	54
Hungry Packer Lake	11,300	1/21/53	84
Drunken Sailor	11,000	1/21/53	54
Piute Lake	11,000	1/21/53	30
George Lake	10,600	1/21/53	20
Treasure Lake	10,200	1/21/53	61
Warren Creek	9,500	1/16/53	54

WATER CONTENT OF MAJOR STORAGE RESERVOIRS

FEBRUARY 1, 1953

Watershed	Reservoir	Operator	10-year Mean 1943-52 (Acre- Feet)	Usable Capacity (Acre- Feet)	Water in Storage (Acre-Feet)		Storage in Per cent of 10-year Mean
					1952	1953	
<u>NORTH COASTAL AREA</u>							
Klamath River	Clear Lake	U.S. Bureau of Reclamation	186,220	513,320	90,800	264,400	140%
	Cerber	U.S. Bureau of Reclamation	27,360	94,270	23,260	58,500	214%
	Upper Klamath Lake	U.S. Bureau of Reclamation	259,710	524,800	304,570	405,000	156%
Shasta River	Shasta R. (Dwinnell)	Montague Water Con. Dist.	15,100	33,000	17,800	24,000	159%
South Eel River	Scott (Lake Pillsbury)	Pacific Gas & Electric Co.	68,470	93,720	75,500	73,460	107%
<u>SAN FRANCISCO BAY</u>							
<u>AREA</u>							
Conn Creek	Conn Creek Dam	City of Napa	-1-	30,500	31,000	31,000	-
San Pablo Creek	San Pablo Dam	East Bay M.U.D.	29,150	43,170	43,490	43,320	149%
San Leandro Creek	Upper San Leandro	East Bay M.U.D.	25,800	41,400	42,020	36,650	142%
San Leandro Creek	Chabot	East Bay M.U.D.	6,310	12,550	11,480	11,510	182%
Calaveras Creek	Calaveras	City & Co. of San Francisco	47,230	96,820	96,820	77,220	165%
Laguna Creek	Upper Crystal Springs)	City & Co. of San Francisco)	51,920	58,380	59,880	52,730	102%
San Mateo Creek	Lower " "	City & Co. of San Francisco)					
San Andreas Creek	San Andreas	City & Co. of San Francisco	15,370	19,000	18,910	17,180	112%
Coyote Creek	Coyote	City & Co. of San Francisco	9,700	24,560	24,560	18,680	253%
Coyote Creek	Leroy Anderson	Santa Clara Valley Water Conservation Dist.	-2-	75,000	47,100	66,420	-
<u>CENTRAL COASTAL</u>							
<u>AREA</u>							
Salinas River	Salinas	U.S. Crops of Engineers	11,840	26,000	26,400	22,700	192%
Santa Ynez River	Gibraltar	City of Santa Barbara	5,770	14,500	14,500	14,500	251%
<u>SOUTH COASTAL AREA</u>							
Bear Creek	Bear Valley	Bear Valley Mutual Water Co.	33,340	72,170	2,720	20,360	61%
San Jacinto River	Lake Hemet	Lake Hemet Water Co.	4,470	13,400	3,540	4,040	90%
Temecula Creek	Vail	Vail Co.	-3-	49,500	6,750	11,750	-
San Gabriel River	Morris	Metropolitan Water Dist.	28,230	35,170	26,650	23,180	82%
San Luis Rey River	Henshaw	Vista I. D.	89,540	203,900	13,900	13,730	15%
Boulder Creek	Cuyamaca	LaMesa, Lemon Grove & Springs; Valley I. D.	3,510	11,600	3,380	N.S.	-
Sweetwater River	Lake Loveland	Calif. Water & Telep. Co.	-4-	25,250	4,980	14,820	-
Sweetwater River	Sweetwater (Main)	Calif. Water & Telep. Co.	10,220	27,150	6,590	6,460	63%
City of San Diego	Municipal Reservoirs	City of San Diego	164,850	399,530	90,310	133,250	81%
<u>CENTRAL VALLEY AREA</u>							
Sacramento	Shasta	U.S. Bureau of Reclamation	-5-	4,500,000	3,622,700	3,246,900	-
Feather	Mountain Meadows	Pacific Gas & Electric Co.	12,910	24,000	19,090	18,670	145%
	Lake Almanor	Pacific Gas & Electric Co.	481,280	649,800	427,440	462,330	96%
	Bucks Storage	Pacific Gas & Electric Co.	77,820	103,000	72,460	62,150	80%
	Butt Valley	Pacific Gas & Electric Co.	36,050	50,000	28,090	40,000	111%

WATER CONTENT OF MAJOR STORAGE RESERVOIRS

FEBRUARY 1, 1953

Watershed	Reservoir	Operator	10-year Mean 1943-52 (Acre-Feet)	Usable Capacity (Acre-Feet)	Water in Storage (Acre-Feet)		Storage in Per cent of 10-year Mean
					1952	1953	
CENTRAL VALLEY AREA (Cont'd)							
Yuba	Bowman Lake	Nevada Irrigation District	25,480	68,000	24,430	56,450	222%
	Scotts Flat	Nevada Irrigation District	-6-	26,800	26,710	26,710	-
	Spaulding System	Pacific Gas & Electric Co.	70,690	150,000	38,100	81,010	115%
Bear	Comble	Nevada Irrigation District	3,500	7,200	5,550	7,160	205%
American	Twin Lakes	Pacific Gas & Electric Co.	11,300	21,300	7,490	5,900	52%
	Silver Lake	Pacific Gas & Electric Co.	1,860	8,900	0	0	0%
Stony Creek	East Park	U.S. Bureau of Reclamation	30,340	50,800	49,170	48,460	160%
	Stony Gorge	U.S. Bureau of Reclamation	24,040	50,050	35,230	30,400	126%
Mokelumne	Salt Springs	Pacific Gas & Electric Co.	21,840	139,000	14,080	19,370	91%
	Pardee	East Bay M.U.D.	163,990	210,000	152,640	180,010	110%
Stanislaus	Relief	Pacific Gas & Electric Co.	6,060	15,100	0	0	0%
	Strawberry	Pacific Gas & Electric Co.	6,790	17,900	2,850	4,160	61%
	Melones	Pacific Gas & Electric Co.	37,450	112,500	55,470	17,390	46%
Tuolumne	Lake Eleanor	City & Co. of San Francisco	14,720	27,800	20,050	18,160	123%
	Hetch Hetchy	City & Co. of San Francisco	141,270	360,000	149,840	167,750	119%
	Don Pedro	Turlock & Modesto I. D.	140,140	289,000	185,600	154,000	110%
	Owen	Turlock & Modesto I. D.	27,770	44,000	33,560	38,000	137%
Merced	Dallas Warner	Modesto Irrigation District	12,840	28,000	14,880	12,610	98%
	Lake McClure	Modesto Irrigation District	130,780	281,000	175,800	95,000	73%
San Joaquin	Crane Valley	Pacific Gas & Electric Co.	29,620	45,400	25,810	17,650	59%
	Florence Lake	Southern Calif. Edison Co.	320	64,400	350	290	91%
	Huntington Lake	Southern Calif. Edison Co.	46,110	88,800	47,170	44,220	96%
	Shaver Lake	Southern Calif. Edison Co.	29,150	135,300	22,550	28,120	96%
	Millerton Lake (Priant)	U.S.B. of Reclamation	-7-	520,500	384,800	342,000	-
LAHONTAN AREA							
	Truckee River	U.S.B. of Reclamation	421,680	732,000	584,400	583,200	138%
	Little Truckee	U.S.B. of Reclamation	10,820	41,050	3,260	N.R.	-
	E. Walker River	Walker River I. D.	29,200	42,450	34,240	35,420	121%
	Leavining Creek	Calif. Electric Power Co.	6,570	11,140	7,740	2,150	33%
	Rush Creek	Calif. Electric Power Co.	5,910	17,600	8,440	4,310	73%
Owens River	Grant Lake	City of Los Angeles	31,550	47,530	34,240	46,980	149%
	Long Valley (Lake Crowley)	City of Los Angeles	126,130	183,470	152,160	179,790	143%
	Tinemaha	City of Los Angeles	5,810	16,410	7,420	1,750	30%
Bishop Creek	Hillside (South Lake)	Calif. Electric Power Co.	6,400	13,190	4,010	5,640	88%
Rose Valley	Haiwee (South)	City of Los Angeles	48,920	58,530	53,080	48,070	98%
COLORADO DESERT AREA							
	Lake Mead	U.S.B. of Reclamation	19,152,000	27,935,000	17,375,000	19,972,000	99%

1. Gates closed December 1945. 2. Gates closed November 1948. 3. Water first stored 1943. 4. Not in complete operation until 1945. 5. Water first stored 1949. 6. Water first stored 1949. 7. Reservoir not in complete operation for full period.

TABLE 9

RUNOFF DATA

October 1, 1952 - January 31, 1953

<u>Area, Stream, and Station</u>	<u>Actual Measured Acre-Feet</u>	<u>Computed Unimpaired Acre-Feet</u>	<u>1/ Normal Acre-Feet</u>	<u>Computed Unimpaired Per Cent of Normal</u>
<u>NORTH COASTAL AREA</u>				
Klamath River at Somesbar	2,806,000	2,990,000	1,745,000	171%
Russian River at Guerneville	1,381,000	1,335,430	666,400	200%
<u>SAN FRANCISCO BAY AREA</u>				
Napa River near St. Helena	65,250	65,250	19,700	331%
Coyote Creek near Madrone	13,380	12,870	14,400	89%
<u>CENTRAL COASTAL AREA</u>				
Arroyo Seco near Soledad	44,340	44,340	40,000	111%
<u>SOUTH COASTAL AREA</u>				
Arroyo Seco near Pasadena	904	904	2,140	42%
Santa Ysabel near Mesa Grande	806	806	3,480	23%
<u>CENTRAL VALLEY AREA</u>				
Sacramento near Red Bluff	4,734,900	4,616,420	2,626,690	176%
Feather near Oroville	1,781,600	1,742,250	1,044,230	167%
Yuba at Smartville	628,540 ^{2/}	797,270	524,110	152%
American at Fair Oaks	635,220	569,300	494,650	115%
Mokelumne near Mokelumne Hill	186,400	104,720	92,550	114%
Stanislaus below Melones Power House	139,200	132,120	139,880	94%
Tuolumne at La Grange	382,300	238,640	231,510	103%
Merced at Exchequer	124,800	104,360	119,160	88%
San Joaquin below Friant	75,700	163,900	181,510	90%
Kings at Piedra	140,800	140,800 ^{3/}	156,980	90%
Kaweah near Three Rivers	N.R.	N.R.	48,970	
Kern near Bakersfield	138,890	138,890 ^{3/}	97,040	143%
<u>LAHONTAN AREA</u>				
Owens River near Round Valley	40,950	42,340	45,800 ^{4/}	92%
<u>COLORADO DESERT AREA</u>				
Colorado River near Grand Canyon	1,594,000	1,594,000 ^{3/}	1,784,300	89%

1/ Normals for streams in the North Coastal, San Francisco Bay, Central Coastal, South Coastal, and Lahontan Areas are based on the 53-year period, 1894-95 - 1946-47, inclusive. Normals for streams in the Central Valley Area are based on the 60-year period, 1889-90 - 1948-49, inclusive.

2/ This is total of Narrows Dam Spill, flow through Narrows Power House and Deer Creek near Smartville.

3/ Not corrected for upstream impairments.

4/ Normal based on 30-year period 1922-23 - 1951-52, inclusive.

N.R. No Report

APPENDIX B

APPENDIX B

RESULTS OF SNOW SURVEYS MADE DURING THE PERIOD
DECEMBER 31 to JANUARY 22, 1953

<u>Areas, Drainage Basins, and Snow Courses</u>	<u>Eleva- tion in Feet</u>	<u>Date of Survey</u>	<u>Depth of Snow Inches</u>	<u>Density Per Cent</u>	<u>Water Content Inches</u>	² <u>Normal Water Content For Entire Season (to April 1st) Inches</u>	<u>Percentage of Total Normal Seasonal Water Content On Ground At Date of Survey This Year</u>
<u>CENTRAL VALLEY</u>							
<u>UPPER SACRAMENTO RIVER</u>							
Mount Shasta	8000	12/31/52	106.5	31.9%	34.0	56.2	60%
Mount Shasta	8000	1/17/53	112.9	37.9%	42.8	56.2	76%
Sand Flats	7000	12/31/52	105.8	28.8%	30.5	47.6	64%
Sand Flats	7000	1/17/53	97.0	36.9	35.8	47.6	75%
<u>YUBA RIVER</u>							
Donner Summit	7020	1/22/53	92.2	40.2%	37.1	45.6	81%
Soda Springs	6750	1/22/53	86.7	41.3%	35.7	41.9	85%
<u>KINGS RIVER</u>							
Grant Grove	6660	1/3/53	44.7	28.6%	12.8	15.8	81%

² See footnotes first page Table 6.