CALIFORNIA COOPERATIVE SNOW SURVEYS

THE RESOURCES AGENCY OF CALIFORNIA

Department of Water Resources

BULLETIN No. 120-63

WATER CONDITIONS IN CALIFORNIA

REPORT No. 2: As of March 1

EDMUND G. BROWN
Governor
State of California

HUGO FISHER
Administrator
The Resources Agency of California

WILLIAM E. WARNE
Director
Department of Water Resources

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FOREWORD

A REPORT ENTITLED "WATER CONDITIONS IN CALIFORNIA" IS PREPARED AS OF THE FIRST OF EACH MONTH, FROM FEBRUARY THROUGH MAY, AND IN THE FALL OF EACH YEAR BY THE DEPARTMENT OF WATER RESOURCES, DIVISION OF OPERATIONS, PURSUANT TO SECTION 228, ARTICLE 2, CHAPTER 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 SURVEYS, EITHER INDEPENDENTLY OR IN COOPERATION WITH ANY PERSON OR ANY COUNTY, STATE, FEDERAL, OR OTHER AGENCY."

THIS REPORT IS PREPARED AS PART OF THE CALIFORNIA COOPERATIVE SNOW SURVEYS PROGRAM, WHICH IS THE OPERATING VEHICLE DESIGNED TO CARRY OUT THE ABOVE PROVISIONS. DATA AND ASSISTANCE WERE FURNISHED BY MANY PUBLIC AND PRIVATE AGENCIES COOPERATING IN THE PROGRAM, BY THE OPERATORS OF STORAGE RESERVOIRS, AND BY AGENCIES WHICH COMPILE AND REPORT PRECIPITATION AND RUNOFF RECORDS. AGENCIES ACTIVELY PARTICIPATING IN THE CALIFORNIA COOPERATIVE SNOW SURVEY PROGRAM BY MAKING SURVEYS, OR BY FURNISHING FUNDS, ARE LISTED ON PAGE VII. AGENCIES CONTRIBUTING OTHER DATA ARE INDICATED IN THE BASIC DATA SUPPLEMENT TO THIS REPORT WHICH IS A SEPARATE VOLUME.

THIS IS THE SECOND OF THE 1963 SERIES OF REPORTS AND DESCRIBES WATER CONDITIONS AS OF MARCH 1, 1963. THE REPORT FIRST SUMMARIZES WATER CONDITIONS ON A STATEWIDE BASIS. FOLLOWING THE SUMMARY, RUNOFF FORECASTS AND THE VARIOUS FACTORS OF WATER SUPPLY ARE DISCUSSED WITH RESPECT TO EACH OF THE HYDROGRAPHIC AREAS DELINEATED ON PLATE 1. BAR GRAPHS AND EXPECTANCY CURVES ARE INCLUDED WITH THE AREA DISCUSSIONS TO FACILITATE COMPARISONS OF CURRENT AND HISTORICAL CONDITIONS. PRINCIPAL WATER SUPPLY FACTORS ARE LISTED BELOW WITH PERTINENT COMMENTS REGARDING THEIR PRESENTATION IN THE REPORT.

PRECIPITATION - SEASONAL AND MONTHLY NORMALS (AVERAGES) ARE BASED ON THE 50-YEAR PERIOD 1906-55.

SNOWPACK - THE PRINCIPAL MONTHS OF SNOW DEPOSITION AND ACCUMULATION ARE DECEMBER THROUGH MARCH. MAXIMUM SNOWPACK IS CONSIDERED TO BE ATTAINED ON APRIL 1. AVERAGE SNOWPACK FIGURES ARE BASED ON THE 30-YEAR PERIOD 1930-59.

RESERVOIR STORAGE - THE TOTAL CONTENTS OF SELECTED MAJOR RESERVOIRS ARE RELATED TO THEIR AGGREGATE CAPACITIES AND TO THEIR COMBINED 10-YEAR AVERAGE SUPPLY. AVERAGE STORAGE IS BASED ON THE 10-YEAR PERIOD 1953-1962.

STREAM FLOW - UNLESS OTHERWISE NOTED, STREAM FLOW IS THE COMPUTED UNIMPAIRED RUNOFF AS IT WOULD BE IF UNALTERED BY UPSTREAM DEVELOPMENT. STREAM FLOW AVERAGES ARE BASED ON THE 50-YEAR PERIOD 1908-57.

SUPPORTING DATA FOR THIS REPORT, INCLUDING RESULTS OF ALL SNOW MEASUREMENTS, AVAILABLE PRECIPITATION RECORDS, STREAM FLOW RECORDS FOR REPRESENTATIVE STREAMS, AND A SUMMARY OF WATER IN STORAGE IN MAJOR RESERVOIRS, WILL BE SENT TO COOPERATORS AND WILL BE MADE AVAILABLE TO OTHER AGENCIES AND INDIVIDUALS UPON REQUEST.

ALLIED REPORTS PUBLISHED BY THE DEPARTMENT OF WATER RESOURCES ARE: BULLETIN 23 - SURFACE WATER FLOW; BULLETIN 39 - WATER SUPPLY CONDITIONS IN SOUTHERN CALIFORNIA; AND BULLETIN 77 - GROUND WATER CONDITIONS IN CENTRAL AND NORTHERN CALIFORNIA. ADDITIONAL INFORMATION AND PRICES ON THE FOREGOING PUBLICATIONS MAY BE OBTAINED BY WRITING TO:

STATE OF CALIFORNIA
PRINTING DIVISION, DOCUMENTS SECTION
SACRAMENTO 14, CALIFORNIA

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STATE OF CALIFORNIA
THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

EDMUND G. BROWN, GOVERNOR
HUGO FISHER, ADMINISTRATOR, THE RESOURCES AGENCY OF CALIFORNIA
WILLIAM E. WARNE, DIRECTOR, DEPARTMENT OF WATER RESOURCES

ALFRED R. GOLZE . . . . . CHIEF ENGINEER

DIVISION OF OPERATIONS

ROBIN R. REYNOLDS . . . . . DIVISION ENGINEER

ACTIVITIES COVERED BY THIS REPORT ARE UNDER THE DIRECTION
OF
WILLIAM L. HORN - CHIEF, WATER OPERATIONS BRANCH

THIS REPORT WAS PREPARED
BY
ROBERT W. MILLER - CHIEF, WATER SUPPLY FORECAST AND SNOW SURVEYS UNIT

ASSISTED
BY

RAYMOND E. BARSCH . . . . . ASSISTANT CIVIL ENGINEER
NED R. PETERSON . . . . . ASSISTANT CIVIL ENGINEER
WILLIAM G. T. FONG . . . . . WATER RESOURCES TECHNICIAN I
WALTER M. HOWARD . . . . . WATER RESOURCES TECHNICIAN I
JOHN D. LARIMER . . . . . ENGINEERING AID II

DATA FOR SOUTHERN CALIFORNIA WERE COMPILED UNDER THE DIRECTION
OF

JAMES J. DOODY . . . . . DISTRICT ENGINEER, SOUTHERN CALIFORNIA DISTRICT

BY

THE PLANNING BRANCH

AGENCIES COOPERATING WITH THE DEPARTMENT 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

- CALIFORNIA ELECTRIC POWER COMPANY
- PACIFIC GAS AND ELECTRIC COMPANY
- SIERRA PACIFIC POWER COMPANY
- SOUTHERN CALIFORNIA EDISON COMPANY

MUNICIPALITIES

- CITY OF LOS ANGELES - DEPARTMENT OF WATER AND POWER
- CITY OF PORTERVILLE
- CITY OF SAN FRANCISCO - PUBLIC UTILITIES COMMISSION

ORGANIZED PUBLIC AGENCIES

- BUENA VISTA WATER STORAGE DISTRICT
- CAMP FAR WEST IRRIGATION DISTRICT
- CENTRAL CALIFORNIA IRRIGATION DISTRICT
- EAST BAY MUNICIPAL UTILITY DISTRICT
- KAWEAH DELTA WATER CONSERVATION DISTRICT
- KAWEAH RIVER ASSOCIATION
- KINGS RIVER WATER ASSOCIATION
- LOS ANGELES COUNTY FLOOD CONTROL DISTRICT
- LOWER TULE RIVER IRRIGATION DISTRICT
- MERCED IRRIGATION DISTRICT
- MODESTO IRRIGATION DISTRICT
- NEVADA IRRIGATION DISTRICT
- OAKDALE IRRIGATION DISTRICT
- OMOCHUMNE-HARTNELL WATER DISTRICT
- PORTERVILLE IRRIGATION DISTRICT
- SACRAMENTO MUNICIPAL UTILITY DISTRICT
- SAUCELITO IRRIGATION DISTRICT
- SOUTH SAN JOAQUIN IRRIGATION DISTRICT
- ST. JOHNS RIVER ASSOCIATION
- TERRA BELLA IRRIGATION DISTRICT
- TURLOCK IRRIGATION DISTRICT
- VANDALIA IRRIGATION DISTRICT

PRIVATE ORGANIZATIONS

- J. G. BOSWELL COMPANY
- KERN COUNTY LAND COMPANY
- LIBERTY FARMS COMPANY
- MILLER & LUX, INC.
- UNITED HOP GROWERS OF CALIFORNIA, INC.

SUMMARY OF WATER CONDITIONS

March 1 data indicates that water supply conditions during the spring and summer season this year will be seriously short in many areas of California. The situation has worsened considerably from that which was reported one month ago on February 1--primarily because normal or (hopefully) above normal snowpack was generally not received during February. The existing situation of a very deficient snowpack is the dominant factor responsible for the anticipated low spring and summer flows.

Much of California (at least as of March 1) is experiencing one of the most contradictory water supply seasons on record. Since the beginning of the water year last October 1, the hydrologic situation in most areas has been one generally associated with drought--punctuated by two brief, but dangerous, flood conditions. Precipitation for the season to date has been above normal in the major water-producing areas north of the Tehachapis--as was streamflow. However, these conditions may be attributed to the two major storms of October and the last of January. An additional example of the contradictory nature of conditions this year is in the Sacramento Valley, where forecasts are near normal for the water year, but as low as 25 percent of normal for the April-July period.

The period during which the state usually receives its major precipitation and snowpack accumulation is rapidly drawing to a close. Maximum snowpack is generally considered to be attained by April 1, and precipitation after May 1 generally does not have a significant effect on water supply conditions. However, wherein weather is concerned, the future is quite unpredictable, and average conditions are rarely attained. Thus, it might snow heavily in April and rain interminably during May. It would now be necessary that both of these conditions be realized to achieve normal supplies this spring and summer. Although theoretically possible, the odds are heavily against this happening, and the chances grow slimmer with each passing week.

This season, as has often been the case in recent years, water supply conditions in Southern California can best be described separately from the rest of the state. Furthermore, as has also so often been the case in recent years, conditions can best be described with one word--dry. Seasonal precipitation to date is generally less than 50 percent of normal and 20 to 30 percent of normal in many areas. As a consequence, runoff is far below normal; storage in surface reservoirs not serviced by Colorado River water has decreased; and ground water levels have lowered. Unless at least normal rainfall occurs during the months of March and April, the year may be drier than the record-breaking years of 1959 and 1961.

In the following table, precipitation, water content of snow, and reservoir storage for each of the major hydrographic areas of the state are presented in terms

SUMMARY OF WATER CONDITIONS

OF PERCENT OF AVERAGE. ALSO PRESENTED IN THE SAME TERMS ARE RUNOFF TO DATE AND A FORECAST OF WATER YEAR RUNOFF FOR EACH OF THE HYDROGRAPHIC AREAS, ASSUMING THAT NORMAL PRECIPITATION WILL FOLLOW.

Hydrographic Area	Oct. 1 - Mar. 1 Precipitation in Percent of Average	Mar. 1 Snow Water Content in Percent of Average	Mar. 1 Reservoir Storage in Percent of Average	Runoff in Percent of Avg.	
				Actual Oct. 1, 1962-Mar. 1, 1963	Forecast 1962-63 Water Year
North Coastal	100	10	105	125	100
San Francisco Bay	115	--	90	125	100
Central Coastal	90	--	95	160	120
South Coastal	40	--	95	25	40
Central Valley					
Sacramento Valley	115	10	105	165	95
San Joaquin Valley	85	25	140	125	70
Lahontan	110	30	85	250	100
Colorado Desert	70	--	130	90	--
ENTIRE STATE	95	20	105 1/	145 2/	90

1/ California reservoirs only.
2/ Excluding Colorado River.

Precipitation during February was generally slightly below normal in the northern half of the state, but was above normal in most areas south of the Tuolumne River. The Owens River Basin received about 300 percent of average February rainfall--considerably greater with respect to normal than any other area of the state. Monthly precipitation in most of the other drainage basins was between 80 and 130 percent of normal. The areal distribution of February rains was quite unusual--those major hydrographic areas that through January had accumulated greater than normal seasonal amounts received less than normal February precipitation, while those areas (excluding the Colorado Desert) that had accumulated less than normal October through January totals received greater than average totals for the month. The net effect of the February rain was to raise the season to date total for the state as a whole to about 95 percent of normal. Even though February precipitation in the South Coastal area was about 115 percent of average, the season to date total for this area is only 40 percent of the long-term mean. Thus, as of March 1, the drought-stricken South Coastal area is the only major hydrographic area in the state in which seasonal rainfall remains significantly below normal.

Snowpack measurements were obtained at approximately 180 snow courses and more than 50 aerial snow depth markers throughout the state on or about March 1. In general, snowpack water content decreased from last month, with the exception of the southern High Sierra. With the high snow line in the Central Valley ranging from 7,000 in the north to 8,500 in the south, some 80 snow courses recorded a snowpack of zero. Normally by March 1, 85 to 90 percent of the seasonal snowpack has accumulated; however, in the vital Central Valley area this year, snowpack accumulation ranges from near zero on the Feather and Yuba River Basins in the Sacramento Valley area to a high of only 65 percent of normal on the Kern River Basin in the San Joaquin Valley. The Owens River

SUMMARY OF WATER CONDITIONS

WATERSHED ON THE EAST SIDE OF THE SIERRA, IN THE LAHONTAN AREA, WAS THE ONLY MAJOR BASIN IN THE STATE WITH NORMAL SNOWPACK ON MARCH 1. THE YUBA RIVER WATERSHED HAD A NEAR NORMAL SNOWPACK AT THIS TIME LAST YEAR WHICH RANGED FROM 95 TO 145 INCHES IN DEPTH--THIS YEAR THERE IS NO SNOW ON MOST COURSES OF THE YUBA.

HEAVY STORM RUNOFF RESULTING FROM THE WARM RAINS OF EARLY AND MID-FEBRUARY WAS AUGMENTED BY CONSIDERABLE SNOWMELT RUNOFF IN MOST CENTRAL VALLEY WATERSHEDS. THUS, AT THE EXPENSE OF AN ALREADY-DEFICIENT SNOWPACK, FEBRUARY FLOWS IN MANY OF THESE MAJOR WATER-PRODUCING STREAMS APPROACHED NEAR RECORD VALUES AND RESULTED IN AN AGGREGATE MONTHLY RUNOFF FROM THE CENTRAL VALLEY AREA WHICH EXCEEDED 200 PERCENT OF NORMAL. THE TRUCKEE, CARSON, AND WALKER RIVER BASINS IN THE LAHONTAN AREA ALSO EXPERIENCED UNUSUALLY HIGH FLOWS ON THE ORDER OF 500 PERCENT OF FEBRUARY AVERAGE. STREAMFLOW FOR THE PERIOD, OCTOBER THROUGH FEBRUARY, WAS APPROXIMATELY 150 PERCENT OF NORMAL FOR THE ENTIRE STATE, AS WELL AS FOR THE CENTRAL VALLEY AREA. THE SOUTH COASTAL AND COLORADO DESERT AREAS ARE THE ONLY MAJOR HYDROGRAPHIC AREAS IN WHICH BELOW NORMAL RUNOFF CONDITIONS EXIST; RUNOFF IN BOTH OF THESE AREAS WAS CONSIDERABLY BELOW NORMAL FOR BOTH FEBRUARY AND THE SEASON TO DATE.

INCREASES IN RESERVOIR STORAGE WERE RECORDED THROUGHOUT CALIFORNIA AS A RESULT OF THE HEAVY FEBRUARY RUNOFF. TOTAL WATER IN STORAGE AT MONTH'S END AMOUNTED TO 111 PERCENT OF THE AVERAGE SUPPLY. THE MOST SIGNIFICANT INCREASES OCCURRED IN RESERVOIRS WHICH SERVE THE CENTRAL VALLEY. STORAGE IN SACRAMENTO VALLEY RESERVOIRS WAS 106 PERCENT OF AVERAGE, AND IN THE SAN JOAQUIN VALLEY, IT REACHED 139 PERCENT OF THE MARCH 1 AVERAGE. WITH LAKE MEAD 83 PERCENT FULL, THE MAJOR AGRICULTURAL AREAS OF CALIFORNIA THAT HAVE ACCESS TO THESE SUPPLIES SHOULD EXPERIENCE NO PROBLEMS DURING THE COMING SEASON. HOWEVER, SINCE THE RECENT RESERVOIR INFLOW IS SUBSTANTIALLY COMPOSED OF WATER WHICH WOULD ORDINARILY BE STORED IN THE SNOW, THE NEED FOR RIGOROUS CONTROL OF WATER PRESENTLY HELD IN STORAGE SHOULD BE EMPHASIZED. ALTHOUGH ABOVE AVERAGE RESERVOIR STORAGE EXISTS IN MOST AREAS, THE PROSPECT OF SUBNORMAL INFLOW DURING THE COMING MONTHS WILL TEND TO NULLIFY THE PRESENT CONDITION OF APPARENT ABUNDANCE IN RESERVOIRS WHICH DEPEND PRIMARILY ON SNOWMELT SUPPLIES.

TABLE 1

SELECTED SNOWPACK AND PRECIPITATION DATA

1A - Snow Data For Selected Key Courses

Snow Course	Watershed	Elevation (Feet)	Date of Survey	Snow Depth (Inches)	Snowpack Water Content		
					1963 (Inches)	1962 (Inches)	April 1 Average (Inches)
Middle Boulder #1	Scott River	6600	2-26	3.0	1.1	-	32.9
Mount Shasta	Sacramento River	7900	2-28	49.5	21.8	41.0	49.4
Upper Lassen Peak	Feather River	8480	2-25	69.5	33.3	61.3	79.0
Donner Summit	Yuba River	6900	3-1	0	0	41.4	39.6
Echo Summit	American River	7450	2-28	13.0	5.4	35.3	38.9
Snow Flat	Tuolumne River	8700	2-25	41.5	20.0	43.4	42.8
Kaiser Pass	San Joaquin River	9200	2-28	45.0[E]	24.4	41.5	38.2
Round Meadow	Kern River	9000	2-28	16.5	8.0	32.0	26.3
Virginia Lakes	Walker River	9500	2-25	36.0	15.2	22.2	17.0
East Piute Pass	Owens River	10800	2-21	43.0	15.4	20.1	11.6

1B - Precipitation Data For Selected Key Stations

Station	Hydrographic Area	Elevation (Feet)	Precipitation in Inches				
			February		Oct. 1 - Feb. 28		Average Annual
			1963	Average	1962-63	Average	
Fort Bragg	North Coastal	80	3.86	5.98	20.63	27.46	37.44
Redwood City	San Francisco Bay	31	3.20	3.54	17.20	14.55	19.87
Santa Maria WBAP	Central Coastal	238	3.30	2.49	5.09	9.48	13.42
Mount Shasta City	Central Valley	3544	3.74	5.12	24.45	22.74	33.53
Bucks Lake		5100	10.89	10.78	56.59	46.99	68.72
Salt Springs		3700	7.60	7.53	27.76	29.71	43.69
Huntington Lake		7020	6.92	5.42	19.13	20.72	31.13
Giant Forest		6360	12.73	8.08	26.20	29.26	43.67
Red Bluff		341	2.28	2.98	13.86	13.65	19.41
Sacramento		25	1.75	3.31	14.39	13.12	18.05
Fresno		331	2.01	1.61	5.41	6.45	9.53
Susanville	Lahontan	4325	.80	2.39	12.86	10.56	15.31
Tahoe		6228	7.62	5.20	27.63	21.60	30.65
Bishop		4108	.63	1.10	3.85	4.44	6.30
Los Angeles	South Coastal	312	2.88	3.21	3.52	10.69	14.79
San Diego		19	1.22	2.30	1.61	8.48	12.12
Warner Springs		3180	3.56	3.01	4.49	11.10	17.42
Twentynine Palms	Colorado Desert	1975	.10	.73	1.86	2.98	4.64

STATE OF CALIFORNIA
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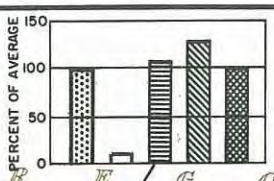
DEPARTMENT OF WATER RESOURCES
DIVISION OF OPERATIONS

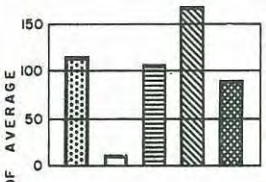
CALIFORNIA COOPERATIVE SNOW SURVEYS

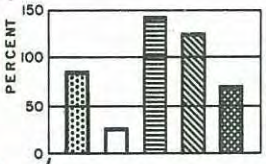
WATER CONDITIONS IN HYDROGRAPHIC AREAS

MARCH 1, 1963

SCALE OF MILES
20 0 20 60

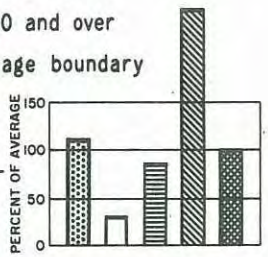


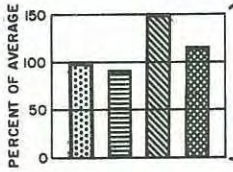


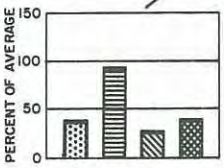


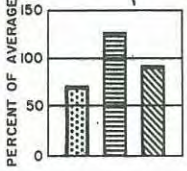
ELEVATION IN FEET

- 500 and under
- 500 to 2500
- 2500 to 5000
- 5000 to 7500
- 7500 to 10,000
- 10,000 and over
- Drainage boundary



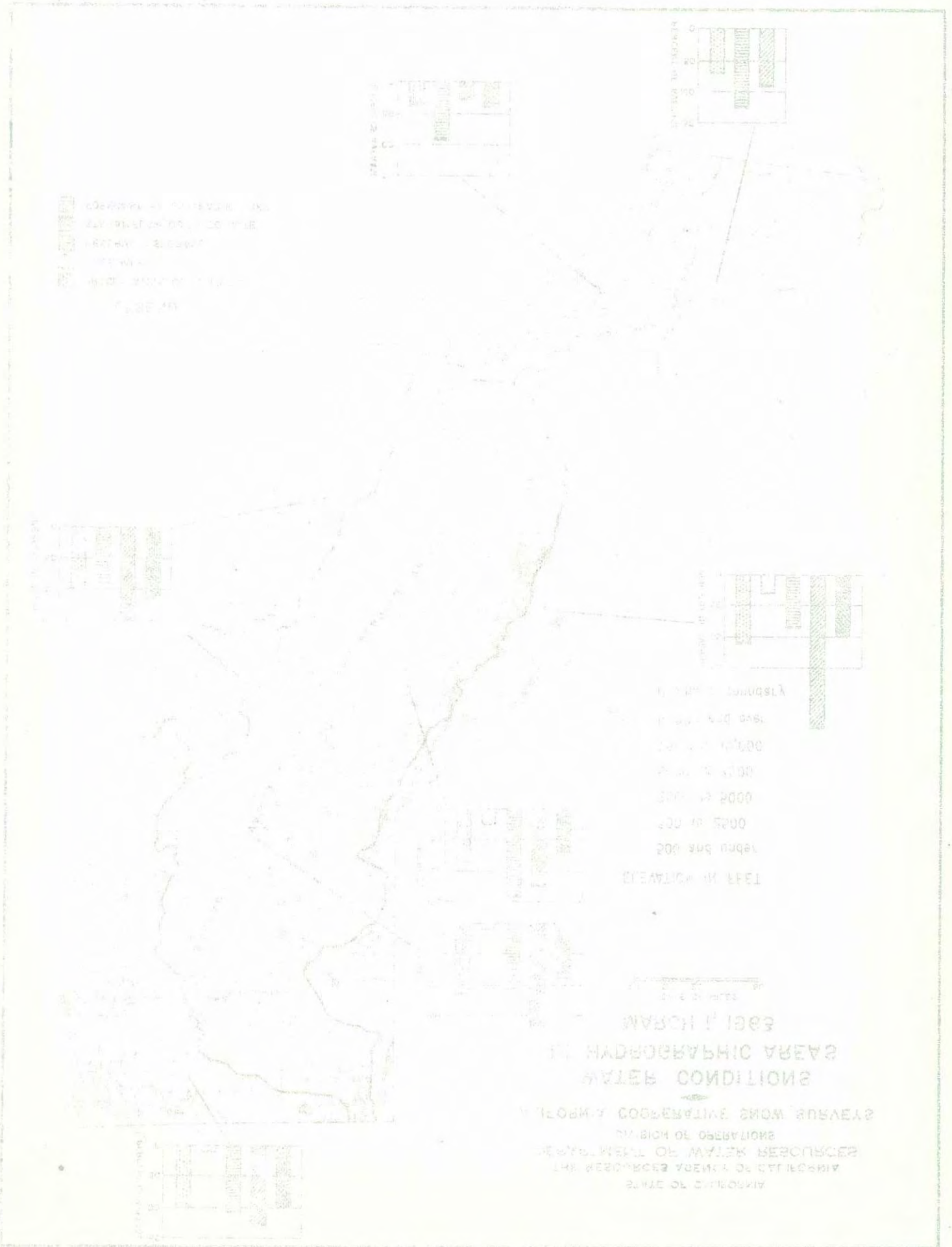






LEGEND

- PRECIPITATION, OCT. 1 TO DATE
- SNOWPACK
- RESERVOIR STORAGE
- STREAMFLOW, OCT. 1 TO DATE
- FORECAST WATER-YEAR RUNOFF



STATE OF CALIFORNIA
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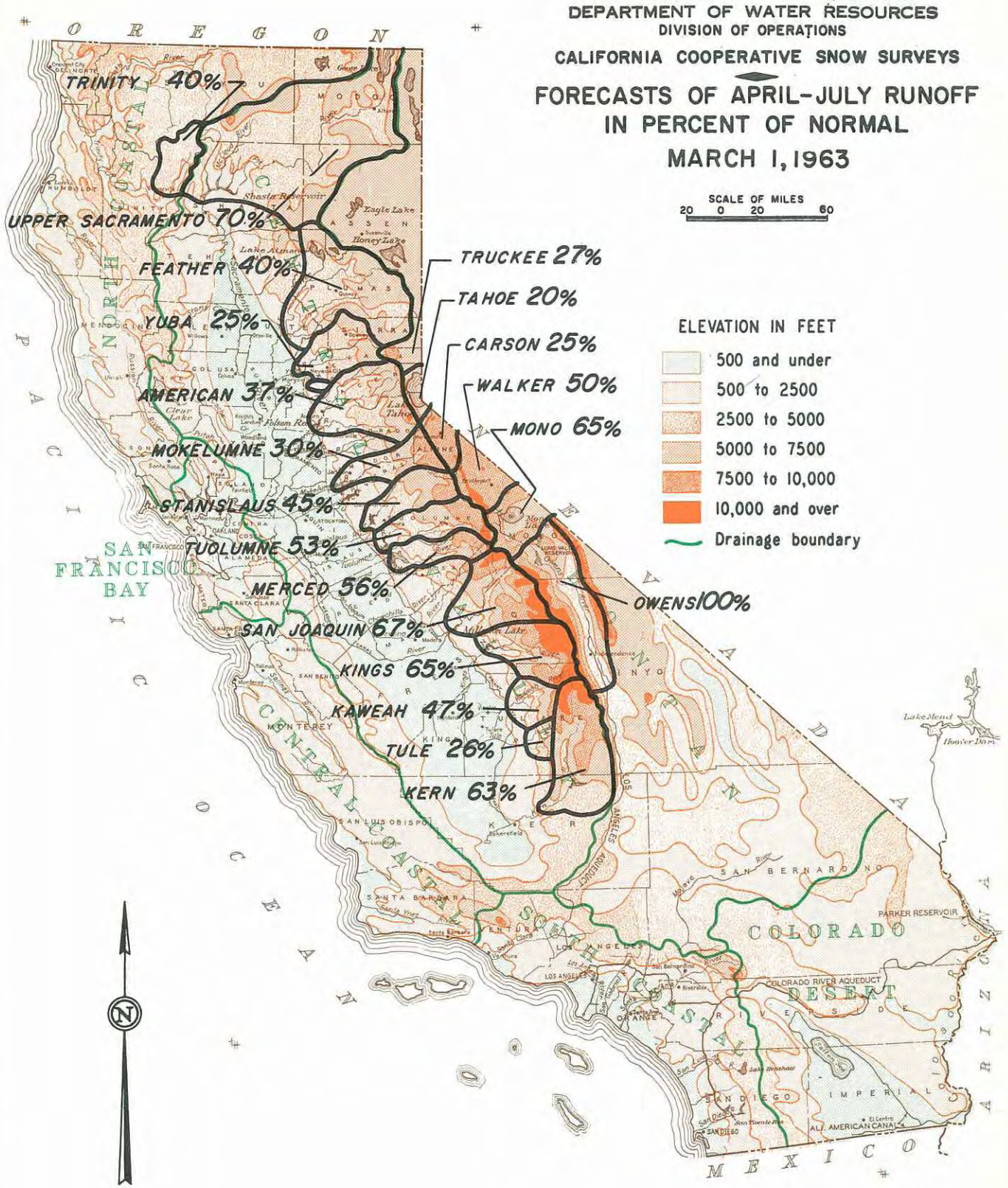
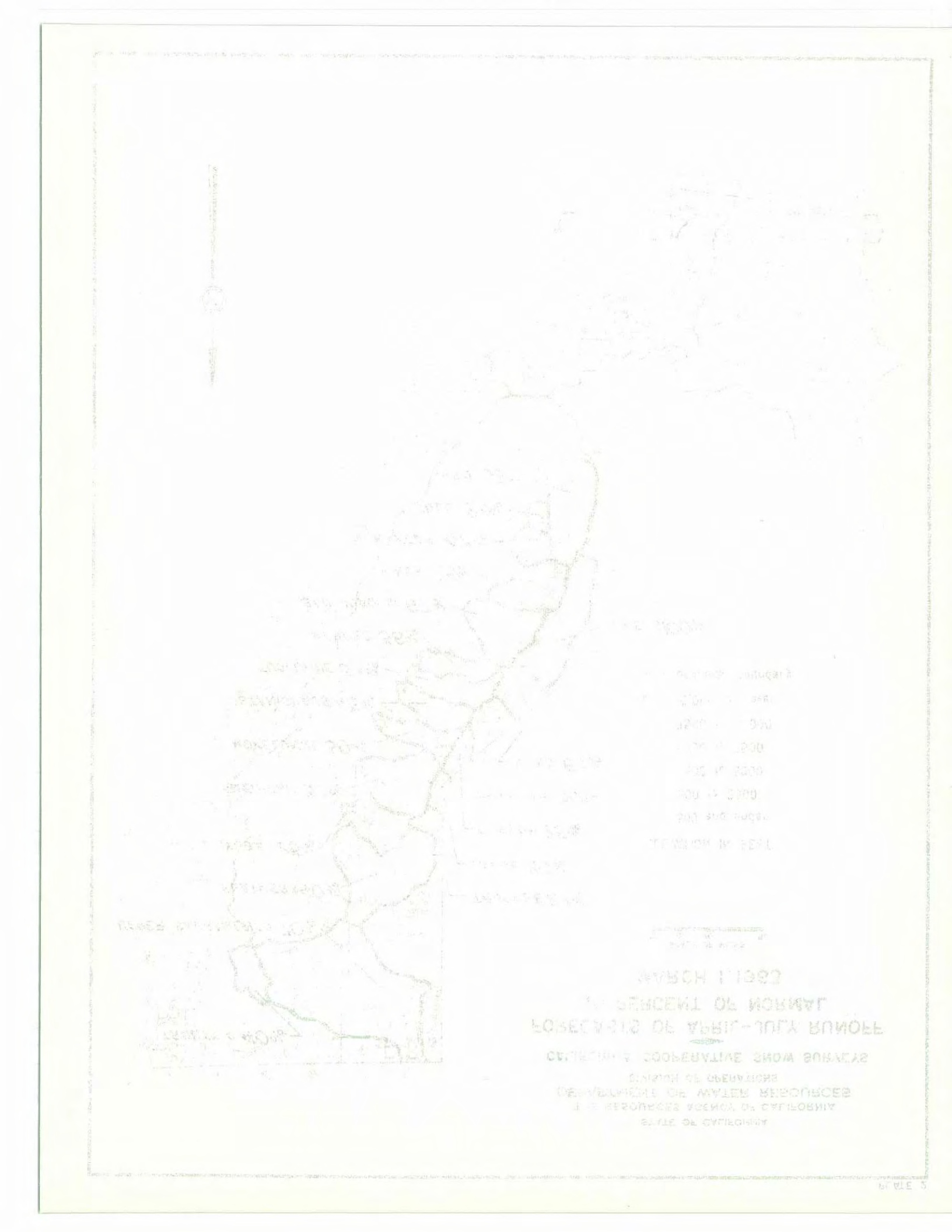
CALIFORNIA COOPERATIVE SNOW SURVEYS

FORECASTS OF APRIL-JULY RUNOFF IN PERCENT OF NORMAL

MARCH 1, 1963





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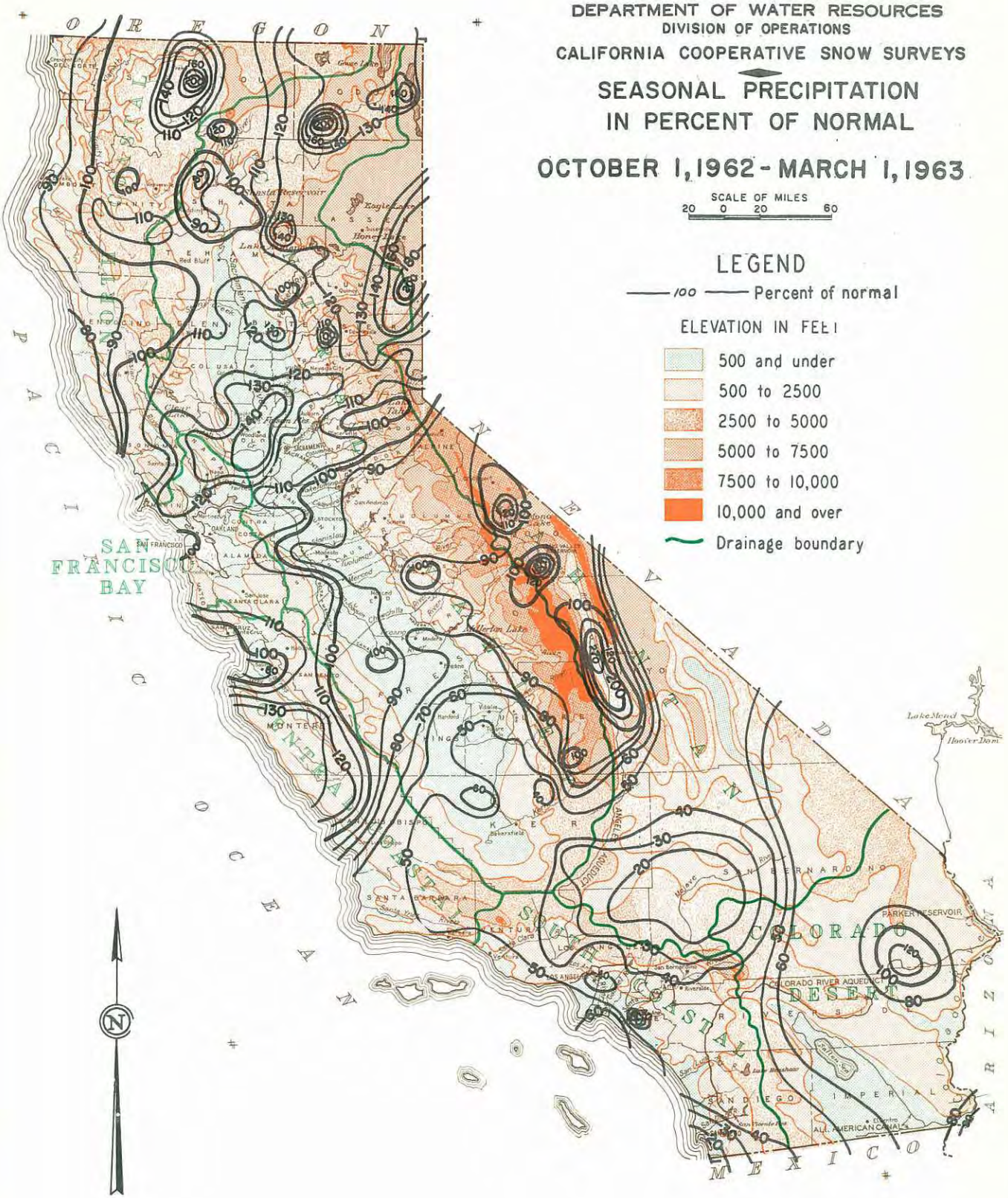
CALIFORNIA COOPERATIVE SNOW SURVEYS

SEASONAL PRECIPITATION IN PERCENT OF NORMAL

OCTOBER 1, 1962 - MARCH 1, 1963



NORTH COASTAL AREA

PRECIPITATION - PRECIPITATION IN THE NORTH COASTAL AREA WAS ABOUT NORMAL FOR THE PERIOD OCTOBER 1 TO MARCH 1. IT VARIED FROM 200 PERCENT OF NORMAL AT GAZELLE 4NNW IN THE SHASTA VALLEY DRAINAGE BASIN TO 75 PERCENT OF NORMAL AT FORT BRAGG ON THE MENDOCINO COAST DRAINAGE. FOR THE MONTH OF FEBRUARY, PRECIPITATION VARIED FROM 200 PERCENT OF NORMAL AT YREKA TO 24 PERCENT OF NORMAL AT POTTER VALLEY POWERHOUSE IN THE RUSSIAN RIVER DRAINAGE. IT IS INTERESTING TO NOTE THAT HONEYDEW 2WSW IN THE MATTOLE DRAINAGE BASIN, ALTHOUGH BELOW NORMAL FOR THE SEASON TO DATE, HAS HAD THE HEAVIEST RAINFALL IN THE STATE, BOTH FOR FEBRUARY WITH 16.35 INCHES, AND FOR THE SEASON WITH 70.19 INCHES.

SNOWPACK - MEASUREMENTS OBTAINED ABOUT MARCH 1 AT SIX SNOW COURSES IN THIS AREA INDICATED THAT SNOWPACK WATER CONTENT WAS ONLY 10 PERCENT OF AVERAGE FOR THAT DATE. ELEVATION OF THE EFFECTIVE SNOW LINE WAS ABOUT 6,500 FEET. THE OREGON COOPERATIVE SNOW SURVEYS REPORTS THAT FURTHER NORTH, IN THE KLAMATH RIVER BASIN IN OREGON, SNOWPACK ON MARCH 1 WAS 23 PERCENT OF AVERAGE.

RESERVOIR STORAGE - ON MARCH 1, THE SEVEN MAJOR RESERVOIRS IN THIS AREA HAD ABOUT 3,194,000 ACRE-FEET OF WATER IN STORAGE. THIS IS 81 PERCENT OF TOTAL CAPACITY, AN INCREASE OF 380,000 ACRE-FEET DURING THE LAST MONTH. THE FIVE RESERVOIRS IN THIS AREA THAT HAVE BEEN IN OPERATION MORE THAN 10 YEARS HAD 93 PERCENT OF THEIR 10-YEAR AVERAGE MARCH 1 CONTENT. TRINITY RESERVOIR ACCOUNTED FOR OVER 200,000 ACRE-FEET OF THE FEBRUARY GAIN, INCREASING ITS STORAGE TO 2,390,000 ACRE-FEET, OR 98 PERCENT OF CAPACITY.

STREAMFLOW - RUNOFF IN MAJOR STREAMS IN THIS AREA SINCE OCTOBER 1 WAS 125 PERCENT OF AVERAGE, AS COMPARED TO 70 PERCENT OF AVERAGE DURING THE SAME PERIOD LAST YEAR. FEBRUARY RUNOFF WAS ABOUT 150 PERCENT OF NORMAL, ALSO CONSIDERABLY GREATER THAN THE 130 PERCENT OF NORMAL WHICH OCCURRED DURING FEBRUARY 1962.

FORECASTS - MARCH 1, 1963

CONDITIONS AT THIS TIME INDICATE THAT RUNOFF OF THE NORTH COASTAL AREA DURING THE 1962-63 WATER YEAR WILL BE ABOUT 100 PERCENT OF AVERAGE, WHICH IS SOMEWHAT MORE THAN THE 80 PERCENT OF AVERAGE FORECAST MADE ON MARCH 1 OF LAST YEAR. APRIL-JULY RUNOFF OF THE TRINITY RIVER AT LEWISTON IS FORECAST TO BE ABOUT 250,000 ACRE-FEET, WHICH IS 40 PERCENT OF THE AVERAGE RUNOFF AT THIS STATION.

THE U. S. SOIL CONSERVATION SERVICE, THE OREGON EXPERIMENT STATION, AND THEIR COOPERATORS FORECAST THAT APRIL-JULY RUNOFF INTO UPPER KLAMATH LAKE WILL BE ABOUT 250,000 ACRE-FEET, OR 48 PERCENT OF THE 1943-57 AVERAGE.

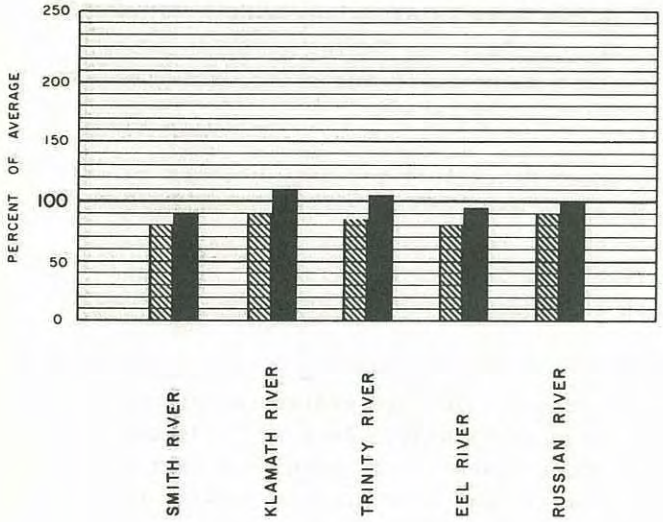
IMPACT

NO UNUSUAL PROBLEMS WILL ARISE FOR WATER USERS IN THE NORTH COASTAL AREA. AMOUNTS OF WATER IN STORAGE ARE JUST SLIGHTLY BELOW NORMAL. THOSE USERS DEPENDENT ON UNREGULATED STREAMFLOW AND GROUND WATER SUPPLIES CAN EXPECT THE USUAL DEPENDENCE ON INCREASED PUMPING AS THE SURFACE SUPPLY DIMINISHES. KEY WELLS SHOW A SLIGHT RISE IN GROUND WATER LEVELS THROUGHOUT THE AREA OVER THAT OF ONE YEAR AGO. NO OVERDRAFT ON THIS SUPPLY EXISTS, AND NONE SEEMS TO BE THREATENING IN ANY OF THE SEVERAL VALLEY FILL AREAS.

NORTH COASTAL AREA

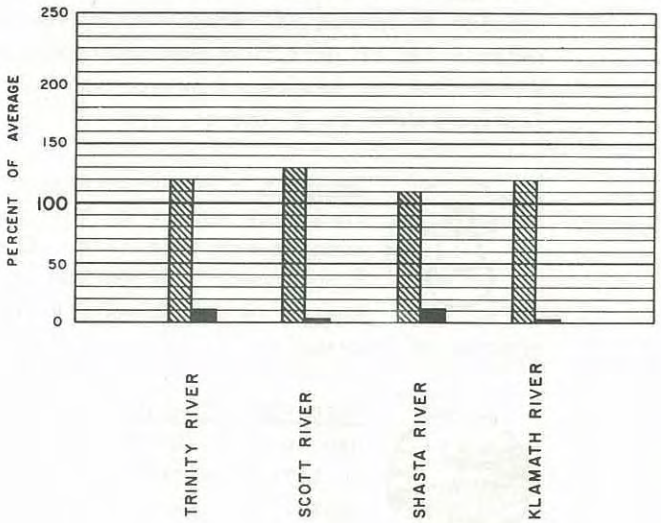
PRECIPITATION

SEASONAL PRECIPITATION
IN PERCENT OF AVERAGE TO DATE



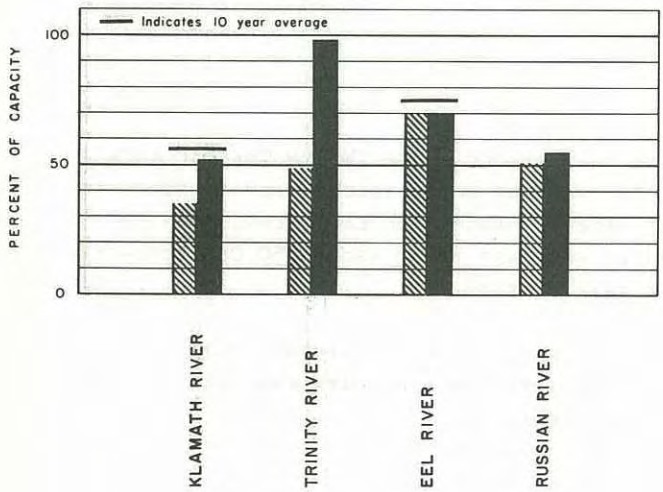
SNOWPACK

SNOWPACK WATER CONTENT
IN PERCENT OF AVERAGE TO DATE



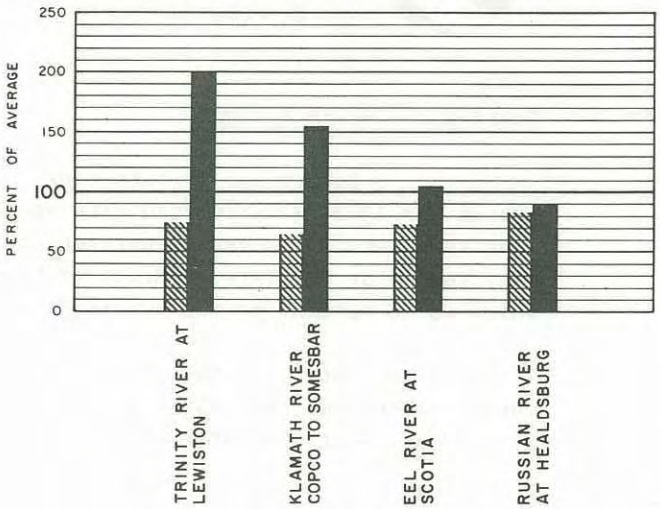
RESERVOIR STORAGE

CONTENTS OF MAJOR RESERVOIRS
IN PERCENT OF CAPACITY



STREAMFLOW

ACCUMULATED UNIMPAIRED RUNOFF SINCE OCTOBER 1
IN PERCENT OF AVERAGE TO DATE

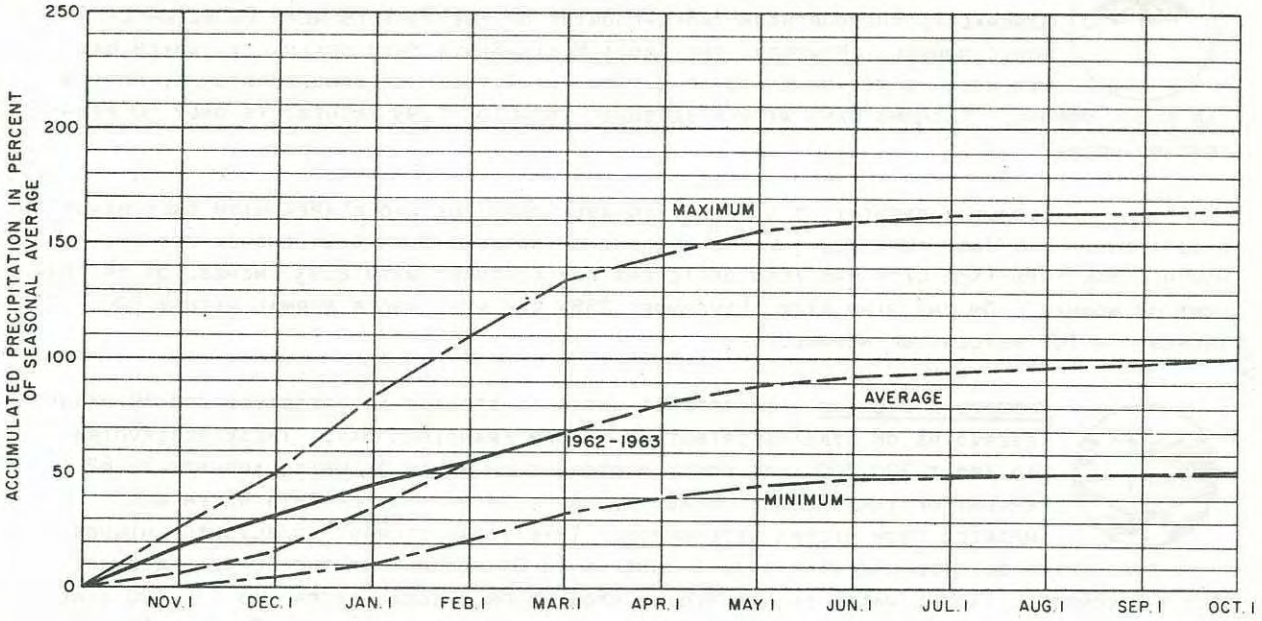


MARCH 1, 1962
MARCH 1, 1963

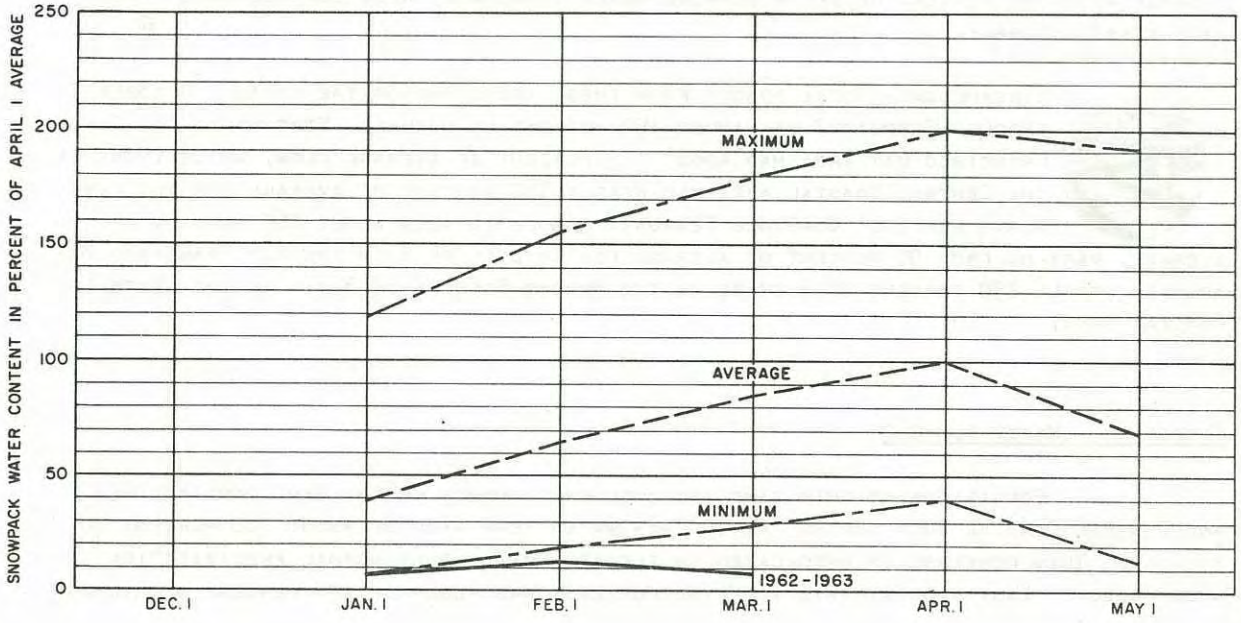
STATUS OF WATER SUPPLY

NORTH COASTAL AREA

PRECIPITATION



SNOWPACK ACCUMULATION



PRECIPITATION AND SNOWPACK ACCUMULATION

SAN FRANCISCO BAY AND CENTRAL COASTAL AREAS

PRECIPITATION - IN THE SAN FRANCISCO BAY AND CENTRAL COASTAL AREA, PRECIPITATION AVERAGED ABOUT NORMAL FOR THE PERIOD OCTOBER 1 TO MARCH 1. GENERALLY, THE NORTHERN THREE-FOURTHS OF THE AREA IS NEAR OR SLIGHTLY ABOVE NORMAL. HOWEVER, THE SANTA MARIA-SANTA YNEZ DRAINAGES, WHICH DID NOT RECEIVE THE BENEFITS OF EITHER THE OCTOBER OR JANUARY STORMS, REMAIN FAR BELOW NORMAL. CACHUMA DAM, WITH A SEASONAL TOTAL OF 6.99 INCHES, IS ONLY 50 PERCENT OF NORMAL.

FEBRUARY PRECIPITATION WAS FAVORABLE OVER THE WHOLE AREA WITH ONLY MINOR EXCEPTIONS. SAN JOSE REPORTED ONLY 42 PERCENT OF NORMAL, WITH 1.04 INCHES FOR THE MONTH. SAN FRANCISCO CITY WAS ALSO DEFICIENT FOR FEBRUARY WITH 2.03 INCHES, OR 54 PERCENT OF NORMAL. ON THE HIGH SIDE, LIVERMORE 2SSW WAS WELL ABOVE NORMAL WITH 4.50 INCHES, OR 187 PERCENT OF NORMAL.

RESERVOIR STORAGE - REPORTS OF WATER IN STORAGE ARE RECEIVED FOR 14 MAJOR RESERVOIRS ON STREAMS TRIBUTARY TO SAN FRANCISCO BAY. THESE RESERVOIRS HAD ABOUT 330,700 ACRE-FEET IN STORAGE ON MARCH 1, WHICH AMOUNTS TO 62 PERCENT OF THEIR TOTAL CAPACITY. A MAJOR PORTION OF THIS WATER WAS IMPORTED FROM SIERRA WATERSHEDS. THIS TOTAL STORAGE IS SLIGHTLY HIGHER THAN THAT WHICH EXISTED ONE YEAR AGO, AMOUNTING TO 91 PERCENT OF THE 10-YEAR AVERAGE MARCH 1 CONTENT. TOTAL WATER IN RESERVOIRS STORING ONLY LOCAL WATER WAS 125,700 ACRE-FEET, WHICH IS ABOUT 15,000 ACRE-FEET MORE THAN LAST YEAR'S CONTENT. THIS IS 60 PERCENT OF THEIR 10-YEAR AVERAGE MARCH 1 CONTENT AND 56 PERCENT OF THEIR TOTAL CAPACITY.

THE SIX RESERVOIRS IN THE CENTRAL COASTAL AREA, FOR WHICH REPORTS ARE RECEIVED, HAD 447,300 ACRE-FEET IN STORAGE ON MARCH 1, ABOUT 51 PERCENT OF THEIR COMBINED CAPACITIES. THIS IS ABOUT 50,000 ACRE-FEET LESS THAN THE QUANTITY IN STORAGE ONE YEAR AGO. TWO OF THESE RESERVOIRS, IN OPERATION FOR MORE THAN 10 YEARS, HAD IN STORAGE ABOUT 97 PERCENT OF THEIR 10-YEAR MARCH 1 AVERAGE, ALSO DOWN SLIGHTLY FROM LAST YEAR'S STORAGE.

STREAMFLOW - TOTAL RUNOFF FROM THESE AREAS DURING THE PERIOD, OCTOBER THROUGH FEBRUARY, WAS ABOUT 150 PERCENT OF NORMAL. STREAMS IN THE SAN FRANCISCO BAY AREA HAD ABOUT 125 PERCENT OF AVERAGE FLOW, WHILE THOSE IN THE CENTRAL COASTAL AREA HAD NEARLY 160 PERCENT OF AVERAGE FOR THE FIVE-MONTH PERIOD. COMBINED FEBRUARY RUNOFF TOTALED ABOUT 165 PERCENT OF AVERAGE, VARYING FROM 90 PERCENT OF AVERAGE FOR COYOTE CREEK IN THE SAN FRANCISCO BAY AREA TO NEARLY 250 PERCENT OF AVERAGE IN THE ARROYO SECO RIVER BASIN OF THE CENTRAL COASTAL AREA.

FORECASTS - MARCH 1, 1963

CONDITIONS AT THIS TIME INDICATE THAT RUNOFF OF THE SAN FRANCISCO BAY AND CENTRAL COASTAL AREA DURING THE 1962-63 WATER YEAR WILL BE ABOUT 100 PERCENT OF AVERAGE. THIS FORECAST IS PREDICATED ON THE ASSUMPTION THAT NORMAL PRECIPITATION WILL FOLLOW. LAST YEAR AT THIS TIME THE FORECAST WAS ALSO FOR 100 PERCENT OF AVERAGE.

SAN FRANCISCO BAY AND CENTRAL COASTAL AREAS

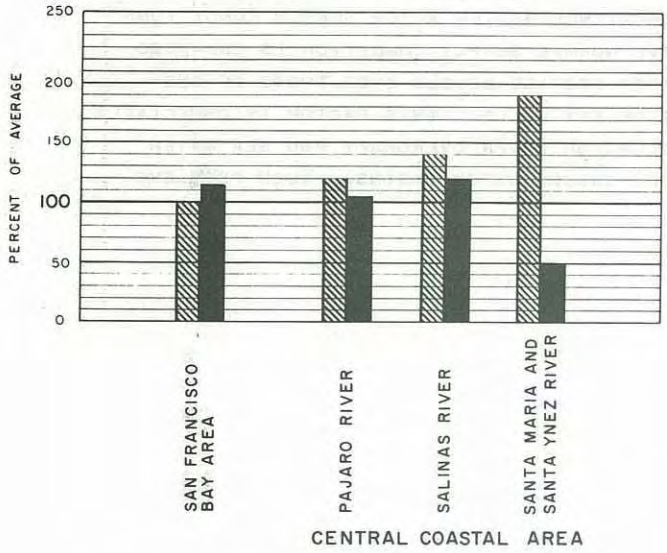
IMPACT

THE COMBINATION OF ANTICIPATED ABOVE NORMAL RUNOFF AND ALMOST NORMAL RESERVOIR SUPPLIES INDICATE THIS AREA WILL EXPERIENCE BETTER WATER SUPPLY CONDITIONS THAN MOST OTHER AREAS OF THE STATE. THIS ABOVE NORMAL SUPPLY CONDITION IS ENHANCED BY REPORTS OF A GENERAL INCREASE IN GROUND WATER STORAGE LEVELS OVER THOSE OF ONE YEAR AGO, AS DETERMINED BY RECENT MEASUREMENT OF KEY WELLS. THIS FACTOR IS ESPECIALLY SIGNIFICANT IN THE CENTRAL COASTAL AREA WHERE GROUND WATER OVERDRAFT AND SEA WATER INTRUSION ARE BECOMING A PROBLEM IN SOME OF THE GROUND WATER BASINS. SUCH PROBLEMS SHOULD BE LESS SEVERE THIS YEAR.

SAN FRANCISCO BAY AND CENTRAL COASTAL AREAS

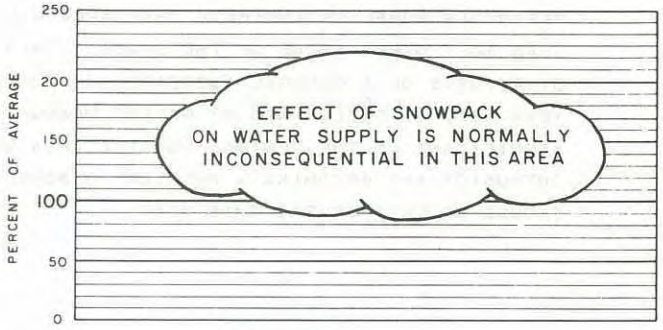
PRECIPITATION

SEASONAL PRECIPITATION
IN PERCENT OF AVERAGE TO DATE



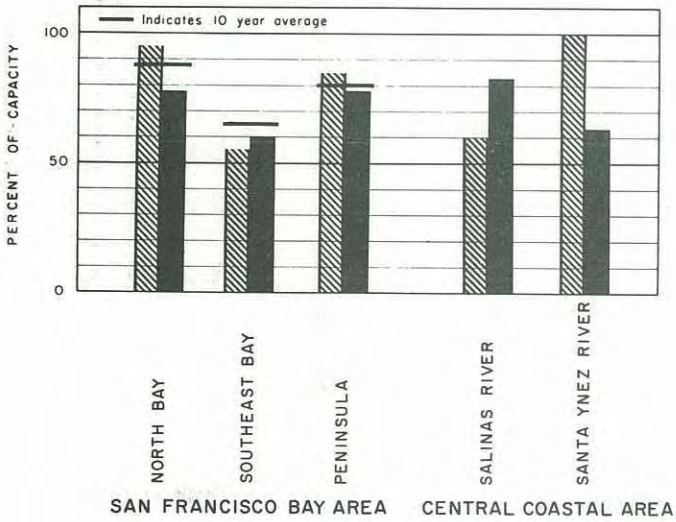
SNOWPACK

SNOWPACK WATER CONTENT
IN PERCENT OF AVERAGE TO DATE



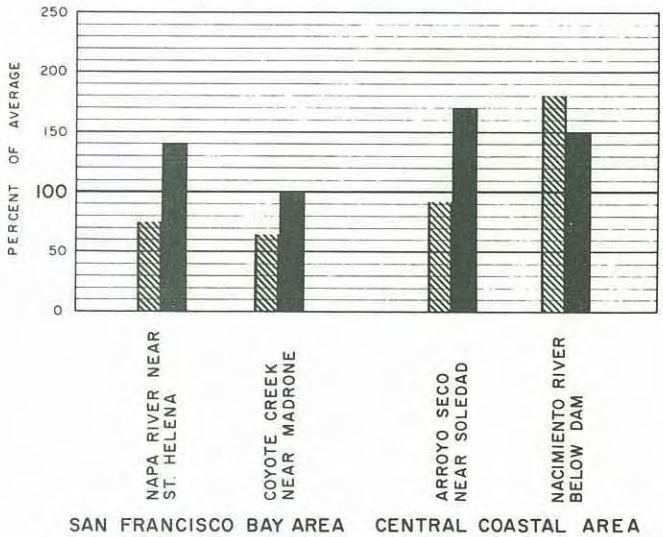
RESERVOIR STORAGE

CONTENTS OF MAJOR RESERVOIRS
IN PERCENT OF CAPACITY



STREAMFLOW

ACCUMULATED UNIMPAIRED RUNOFF SINCE OCTOBER 1
IN PERCENT OF AVERAGE TO DATE

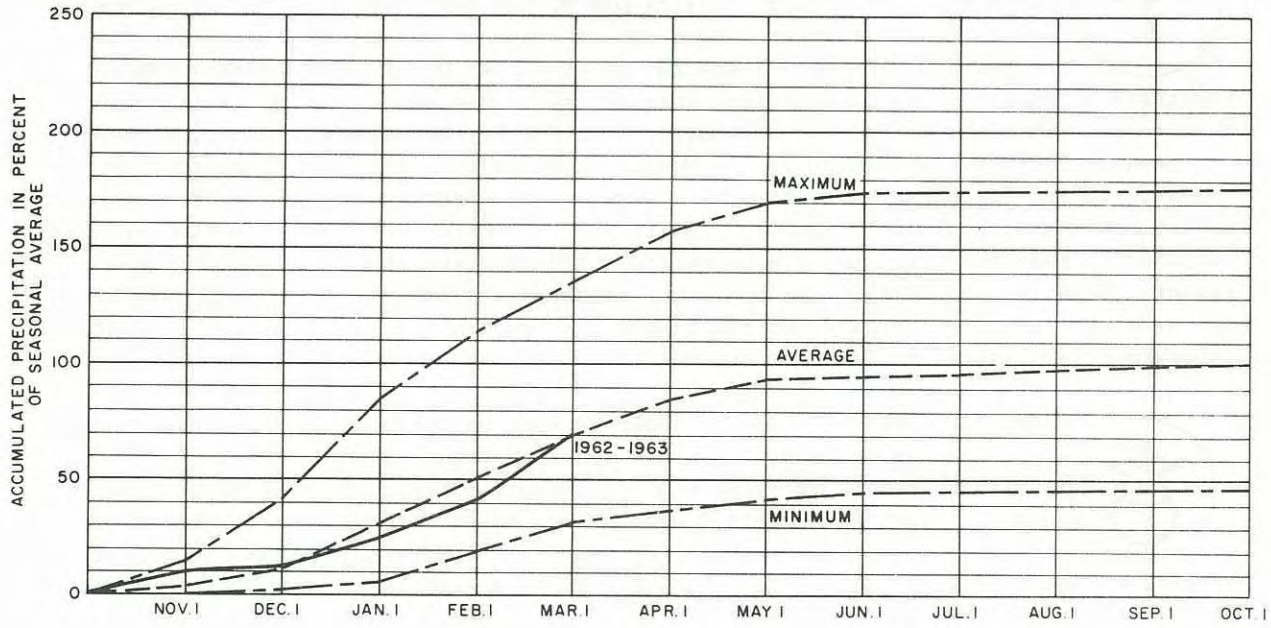


MARCH 1, 1962
MARCH 1, 1963

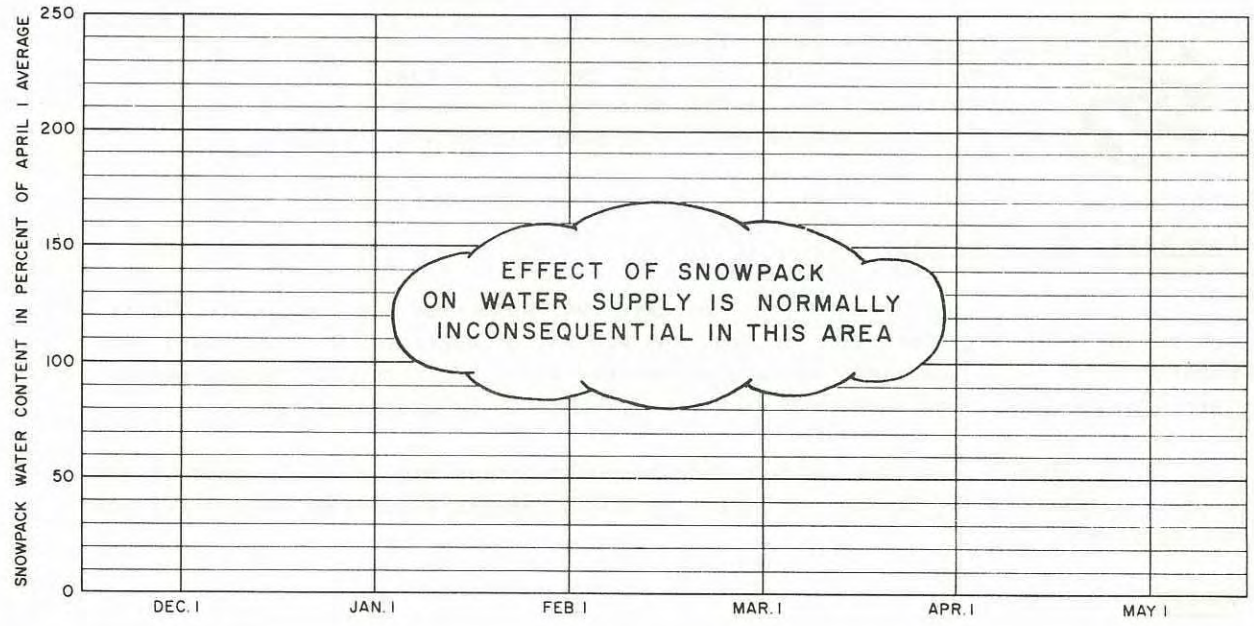
STATUS OF WATER SUPPLY

SAN FRANCISCO BAY AND CENTRAL COASTAL AREAS

PRECIPITATION



SNOWPACK ACCUMULATION



PRECIPITATION AND SNOWPACK ACCUMULATION

SACRAMENTO VALLEY
CENTRAL VALLEY AREA

PRECIPITATION - OCTOBER 1, 1962, TO MARCH 1, 1963, PRECIPITATION OVER THE SACRAMENTO VALLEY WAS ABOUT 115 PERCENT OF NORMAL. ON A NORTH-SOUTH LINE ALONG THE VALLEY FLOOR, SHASTA DAM TO THE NORTH WAS SLIGHTLY BELOW NORMAL WITH 79 PERCENT. THE VALUES BECAME INCREASINGLY BETTER MOVING SOUTH, REACHING A HIGH OF 157 PERCENT OF NORMAL AT DAVIS 1W. CONTRADICTORILY, THE CHAIN OF MOUNTAIN DRAINAGE BASINS FARED BETTER TO THE NORTH, BUT RAINFALL BECAME DECREASINGLY LESS MOVING SOUTH. LOOKOUT, IN THE PIT RIVER DRAINAGE, WAS 200 PERCENT OF NORMAL. ELECTRA POWERHOUSE, IN THE MOKELUMNE RIVER DRAINAGE, WAS 88 PERCENT OF NORMAL. DURING FEBRUARY, HEAVY RAINFALL, WITH A HIGH FREEZING LEVEL, AT THE BEGINNING OF THE MONTH CAUSED DAMAGING RUNOFF. THE INTENSE RAINFALL OVER THREE CONSECUTIVE DAYS INTERRUPTED TRANSPORTATION AND COMMUNICATION ACTIVITIES AND RESULTED IN SIGNIFICANT DAMAGE. COBB, IN THE PUTAH CREEK DRAINAGE, REPORTED A STORM TOTAL OF 10.39 INCHES. ON THE EAST SIDE OF THE SIERRA, MEYERS RANGER STATION, IN THE TAHOE-TRUCKEE DRAINAGE, REPORTED A STORM TOTAL OF 14.88 INCHES.

SNOWPACK - MEASUREMENTS OF SNOWPACK WERE OBTAINED AT 58 SNOW COURSES IN THIS AREA ABOUT MARCH 1. FORTY-THREE OF THESE COURSES REPORTED NO SNOW. WATER CONTENT AT THE REMAINING 15 COURSES AVERAGED ONLY 25 PERCENT OF NORMAL. THIS REPRESENTS 9 PERCENT OF NORMAL FOR THE ENTIRE AREA FOR THE SEASON TO DATE AND 8 PERCENT OF THE APRIL 1 AVERAGE. ELEVATION OF THE EFFECTIVE SNOW LINE WAS 7,000 FEET. LAST YEAR AT THIS TIME, SNOWPACK WATER CONTENT WAS 115 PERCENT OF THE MARCH AVERAGE, AND THE AVERAGE SNOW LINE WAS 3,000 FEET.

RESERVOIR STORAGE - TWENTY-SIX MAJOR RESERVOIRS IN THIS AREA HAD A TOTAL OF 7,355,000 ACRE-FEET OF WATER IN STORAGE ON MARCH 1. THIS IS APPROXIMATELY 77 PERCENT OF THEIR COMBINED CAPACITY AND 106 PERCENT OF THEIR 10-YEAR AVERAGE MARCH 1 WATER CONTENT. THERE WAS A NET INCREASE IN STORED WATER OF ABOUT 700,000 ACRE-FEET DURING THE PAST YEAR, WHICH CAN BE ATTRIBUTED TO THE GAIN OF 830,000 ACRE-FEET DURING FEBRUARY.

STREAMFLOW - UNIMPAIRED FEBRUARY RUNOFF IN THE MAJOR STREAMS OF THE SACRAMENTO VALLEY WAS ABOUT 190 PERCENT OF AVERAGE. THIS BOOSTED THE SEASON TO DATE TOTAL TO 165 PERCENT OF NORMAL, OR NEARLY TWICE THAT WHICH OCCURRED DURING THE SAME PERIOD LAST YEAR.

FORECASTS - MARCH 1, 1963

CONDITIONS AT THIS TIME INDICATE THAT RUNOFF OF THE SACRAMENTO VALLEY FOR THE 1962-63 WATER YEAR WILL BE ABOUT 95 PERCENT OF AVERAGE. THIS FORECAST IS PREDICATED ON THE ASSUMPTION THAT NORMAL PRECIPITATION WILL FOLLOW. RUNOFF DURING THIS WATER YEAR WILL BE ABOUT THE SAME IN THIS AREA AS IT WAS LAST YEAR.

RUNOFF DURING THE APRIL-JULY SNOWMELT PERIOD WILL BE ONLY ABOUT 45 PERCENT OF AVERAGE IN THE SACRAMENTO VALLEY, ASSUMING NORMAL PRECIPITATION FOR THE REST OF THE SEASON.

IMPACT

LACK OF STORAGE CAPACITY ON THE FEATHER RIVER, AND THE ANTICIPATED BELOW NORMAL SPRING AND SUMMER RUNOFF, WILL PLACE ADDITIONAL DEMANDS ON WATER FROM OTHER

SACRAMENTO VALLEY
CENTRAL VALLEY AREA

SOURCES TO SATISFY NEEDS FOR IRRIGATION, NAVIGATION, AND SALINITY CONTROL IN THE SACRAMENTO RIVER SYSTEM. SUPPLIES ON SACRAMENTO VALLEY'S WEST SIDE WILL BE ADEQUATE IN MOST AREAS. MOUNTAIN AND FOOTHILL LANDS WHICH DEPEND ON A SUSTAINED BASE FLOW FROM UNREGULATED STREAMS FOR IRRIGATION OF PASTURE LANDS WILL ENCOUNTER EARLIER DEFICIENCIES IN THIS SUPPLY DUE TO EARLIER-THAN-USUAL STREAMFLOW RECESSIONS TO SEASONAL MINIMUMS.

THE FOLLOWING TABULATION SUMMARIZES RUNOFF FORECASTS FOR SACRAMENTO VALLEY STREAMS FOR BOTH THE WATER YEAR AND THE APRIL-JULY SNOWMELT PERIOD. THE LIMITS ARE ALSO SHOWN FOR AN 80 PERCENT PROBABILITY RANGE FOR APRIL-JULY RUNOFF. THIS MEANS THAT THERE IS AN 80 PERCENT PROBABILITY THAT THE RUNOFF WILL FALL WITHIN THE INDICATED LIMITS.

SACRAMENTO VALLEY
STREAM FLOW FORECASTS

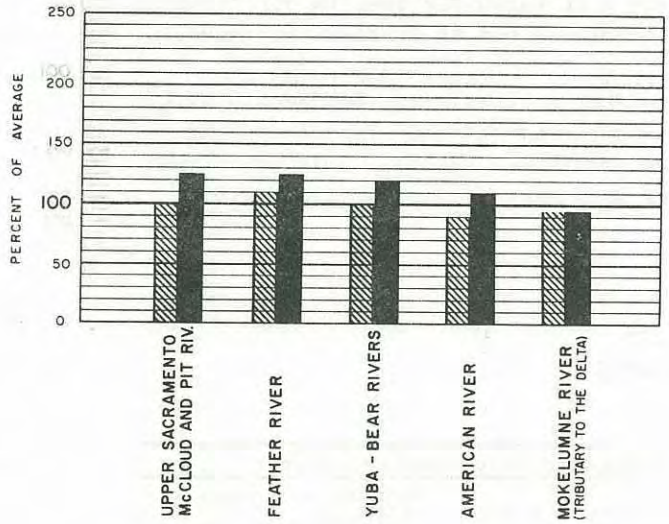
WATERSHED AND STATION	MARCH 1, 1963, FORECASTS OF UNIMPAIRED RUNOFF				
	1962-63 WATER YEAR 1/		APRIL 1 - JULY 31 1/		APRIL 1-JULY 31 80% PROB. RANGE
	ACRE-FEET	% AVERAGE	ACRE-FEET	% AVERAGE	ACRE-FEET
SACRAMENTO, INFLOW TO SHASTA 2/	5,200,000	94	1,280,000	71	700,000 TO 2,000,000
SACRAMENTO AT RED BLUFF	7,100,000	89	1,700,000	68	850,000 TO 2,500,000
FEATHER NEAR OROVILLE	4,540,000	104	800,000	40	200,000 TO 1,600,000
YUBA AT SMARTVILLE	2,200,000	97	280,000	25	50,000 TO 800,000
BEAR NEAR WHEATLAND	-	-	50,000	70	-
AMERICAN, INFLOW TO FOLSOM	2,380,000	90	520,000	37	100,000 TO 1,200,000
COSUMNES AT MICHIGAN BAR	-	-	100,000	79	45,000 TO 175,000
MOKELUMNE, INFLOW TO PARDEE	470,000	65	145,000	30	20,000 TO 350,000

1/ ASSUMING NORMAL PRECIPITATION SUBSEQUENT TO MARCH 1, 1963.
2/ NOT CORRECTED FOR UPSTREAM IMPAIRMENTS.

SACRAMENTO VALLEY
CENTRAL VALLEY AREA

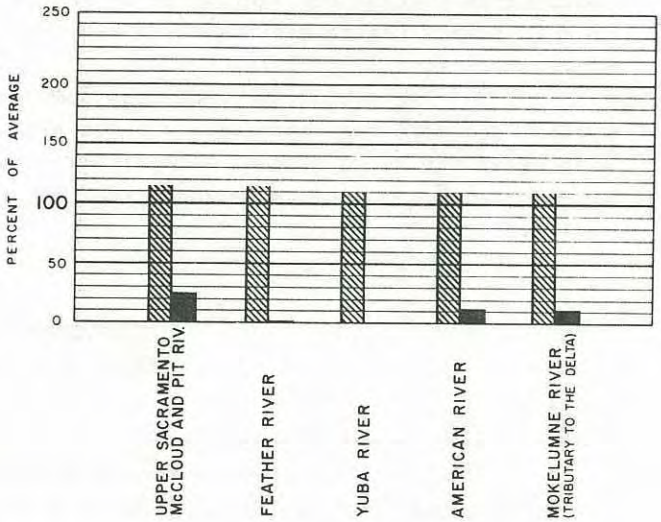
PRECIPITATION

SEASONAL PRECIPITATION
IN PERCENT OF AVERAGE TO DATE



SNOWPACK

SNOWPACK WATER CONTENT
IN PERCENT OF AVERAGE TO DATE



RESERVOIR STORAGE

CONTENTS OF MAJOR RESERVOIRS
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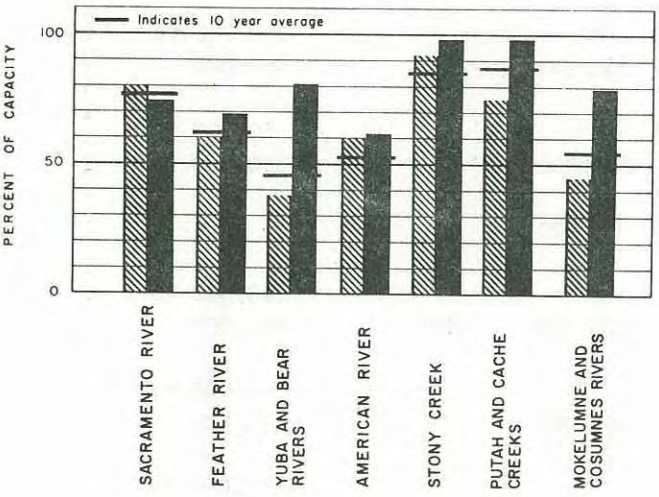
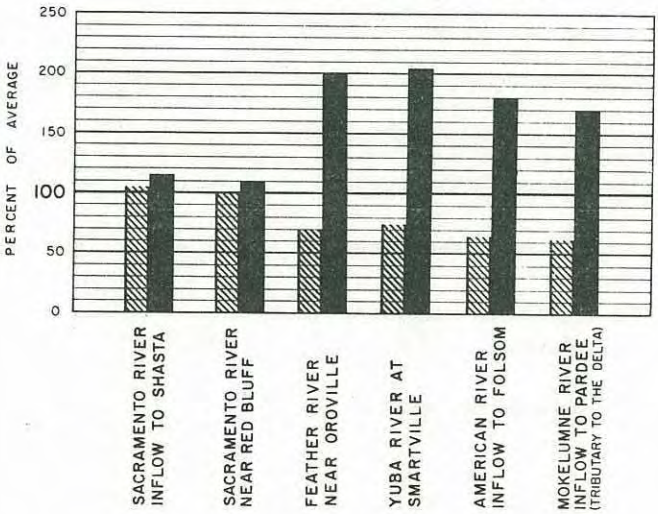


STREAMFLOW

ACCUMULATED UNIMPAIRED RUNOFF SINCE OCTOBER 1
IN PERCENT OF AVERAGE TO DATE

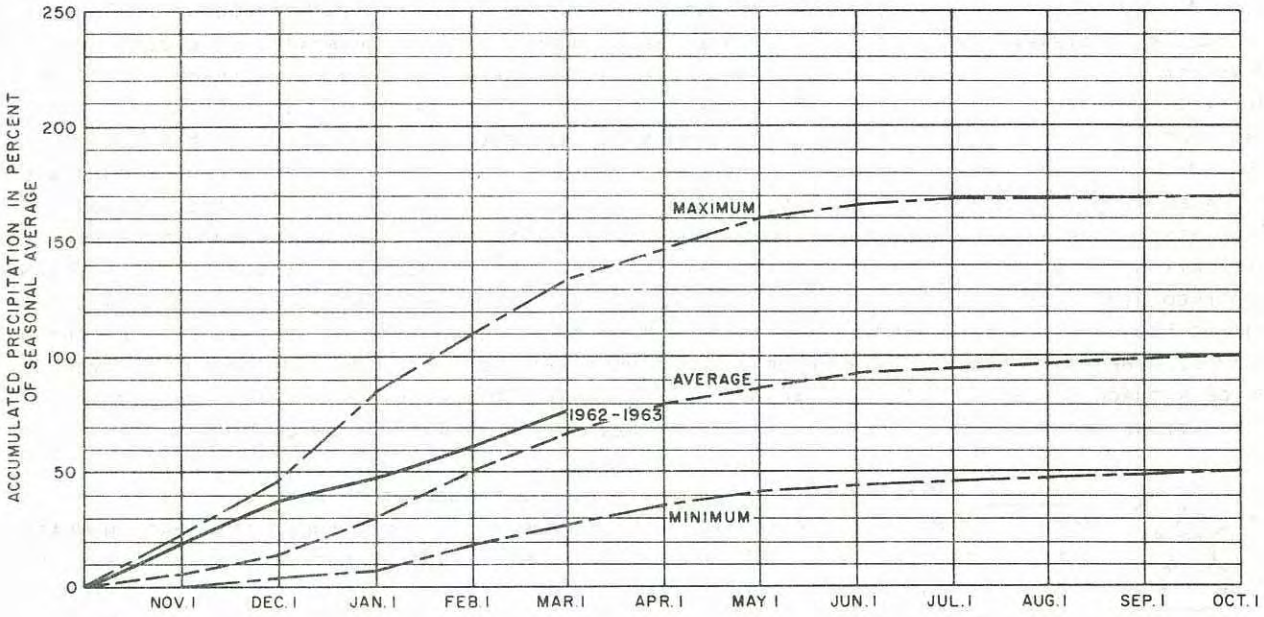


MARCH 1, 1962
MARCH 1, 1963

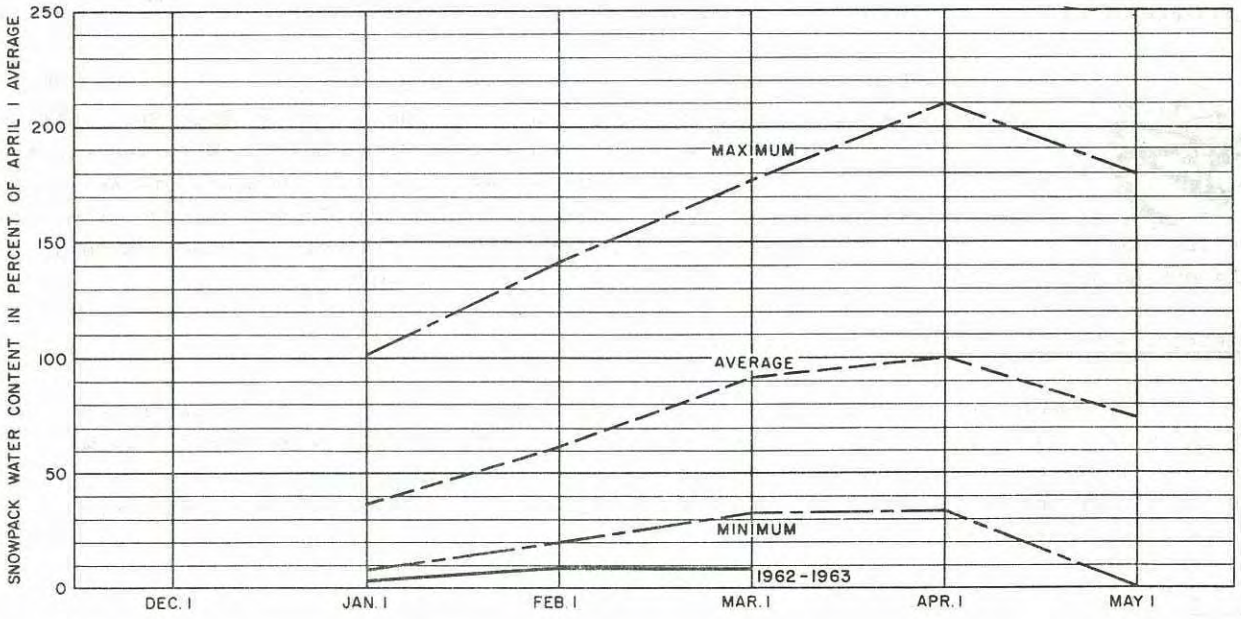
STATUS OF WATER SUPPLY

SACRAMENTO VALLEY
CENTRAL VALLEY AREA

PRECIPITATION



SNOWPACK ACCUMULATION



PRECIPITATION AND SNOWPACK ACCUMULATION

SAN JOAQUIN VALLEY
CENTRAL VALLEY AREA

PRECIPITATION - FROM OCTOBER 1, 1962, TO MARCH 1, 1963, PRECIPITATION WAS ABOUT 85 PERCENT OF NORMAL OVER THE SAN JOAQUIN VALLEY. SEASONAL PRECIPITATION VALUES RANGED FROM 122 PERCENT OF NORMAL AT NEWMAN 2NW, IN THE SAN JOAQUIN VALLEY WESTSIDE, TO 24 PERCENT OF NORMAL AT TEHACHAPI IN KERN COUNTY. ALL THE SIERRA DRAINAGES WERE SLIGHTLY BELOW NORMAL WITH MINOR SCATTERED EXCEPTIONS. MARIPOSA IN THE MERCED DRAINAGE, FLORENCE LAKE IN THE UPPER SAN JOAQUIN DRAINAGE, AND KERN RIVER INTAKE #3 IN THE KERN DRAINAGE REPORTED 112 PERCENT OF NORMAL. ON THE VALLEY FLOOR, THE NORTHERN HALF WAS NEAR NORMAL, BUT DIMINISHING RAINFALL TO THE SOUTH LEFT THE TULARE LAKE VALLEY FLOOR AREA ONLY ABOUT 50 PERCENT OF NORMAL. FEBRUARY PRECIPITATION IN THIS AREA AVERAGED ABOUT 115 PERCENT OF NORMAL, WITH GENEROUS AMOUNTS FALLING ON THE VALLEY FLOOR (160 PERCENT OF NORMAL) AND NEAR NORMAL AMOUNTS IN THE SIERRA. THE LOWEST AMOUNT OF PRECIPITATION RECORDED IN THE AREA WAS AT LAKE ELEANOR IN THE TUOLUMNE DRAINAGE. THIS STATION RECEIVED 3.60 INCHES, OR 49 PERCENT OF NORMAL DURING THE MONTH. THE HIGHEST AMOUNT RECEIVED DURING FEBRUARY WAS AT STOCKTON FIRE STATION 4 WHICH RECEIVED 5.86 INCHES, OR 252 PERCENT OF NORMAL. THE LOS BANOS AREA, WHICH UP TO LAST MONTH HAD RECEIVED ONLY 50 PERCENT OF AVERAGE OCTOBER THROUGH JANUARY RAINFALL, ALSO RECEIVED ABOUT 250 PERCENT OF NORMAL FEBRUARY PRECIPITATION, BOOSTING ITS SEASONAL TOTAL TO 98 PERCENT OF AVERAGE AMOUNT.

SNOWPACK - MEASUREMENTS OF SNOWPACK WERE OBTAINED AT 85 SNOW COURSES IN THIS AREA ABOUT MARCH 1. ANALYSIS OF DATA FROM KEY COURSES INDICATES THAT SNOWPACK WATER CONTENT WAS ABOUT 27 PERCENT OF NORMAL FOR THAT DATE AND ONLY 23 PERCENT OF THE APRIL 1 AVERAGE. ELEVATION OF THE EFFECTIVE SNOW LINE WAS APPROXIMATELY 8,000 FEET. A YEAR AGO, SNOWPACK WATER CONTENT WAS 135 PERCENT OF THE MARCH 1 AVERAGE, AND THE SNOW LINE WAS APPROXIMATELY 3,000 FEET.

RESERVOIR STORAGE - TWENTY-SIX MAJOR RESERVOIRS IN THIS AREA HAD A TOTAL OF 2,496,000 ACRE-FEET OF WATER IN STORAGE ON MARCH 1. THIS REPREsents ABOUT 51 PERCENT OF THEIR COMBINED CAPACITY AND 139 PERCENT OF THEIR 10- YEAR AVERAGE MARCH 1 WATER SUPPLY. THERE WAS AN INCREASE IN STORED WATER OF 725,000 ACRE-FEET DURING FEBRUARY, AND A NET INCREASE OF ABOUT 970,000 ACRE-FEET DURING THE PAST YEAR.

STREAMFLOW - FEBRUARY RUNOFF FROM SAN JOAQUIN VALLEY WATERSHEDS WAS ABOUT 240 PERCENT OF AVERAGE, VARYING FROM 145 PERCENT OF NORMAL IN THE TULE RIVER DRAINAGE TO ABOUT 300 PERCENT OF NORMAL IN THE KAWEAH RIVER BASIN. WITH THE EXCEPTION OF THE TULE RIVER, THE MONTHLY UNIMPAIRED FLOW IN EACH MAJOR STREAM IN THIS AREA EXCEEDED 220 PERCENT OF NORMAL. THESE HEAVY FEBRUARY FLOWS INCREASED THE SEASONAL RUNOFF TO DATE IN THIS AREA TO ABOUT 125 PERCENT OF NORMAL. RUNOFF IN THIS AREA DURING THE SAME PERIOD LAST YEAR WAS ONLY 80 PERCENT OF NORMAL.

FORECASTS - MARCH 1, 1963

CONDITIONS AT THIS TIME INDICATE THAT RUNOFF OF THE SAN JOAQUIN VALLEY FOR THE 1962-63 WATER YEAR WILL BE ABOUT 70 PERCENT OF AVERAGE. WATER YEAR RUNOFF LAST YEAR WAS ABOUT 90 TO 115 PERCENT OF AVERAGE. RUNOFF DURING THE APRIL-JULY SNOWMELT PERIOD IS EXPECTED TO BE ABOUT 58 PERCENT OF AVERAGE. THESE FORECASTS ARE BASED ON THE ASSUMPTION THAT NORMAL PRECIPITATION WILL FOLLOW.

IMPACT

CONSIDERING THE DISTRIBUTION OF WHAT LITTLE SNOW COVER THERE IS IN THE HEADWATERS OF STREAMS SUPPLYING THE CENTRAL VALLEY, SURFACE WATER SUPPLY CONDITIONS WILL BE

SAN JOAQUIN VALLEY
CENTRAL VALLEY AREA

RELATIVELY BETTER IN THE SAN JOAQUIN VALLEY THAN IN MOST AREAS FARTHER NORTH WHERE SNOW ACCUMULATION IS THE MOST DEFICIENT. MOST AREAS SHOWED INCREASES IN GROUND WATER LEVELS DURING THE LAST YEAR. THE PRESENT WATER SUPPLY OUTLOOK FOR THE COMING SEASON INDICATES THAT INCREASED RELIANCE WILL BE PLACED ON GROUND WATER SUPPLIES IN MANY AREAS. THEREFORE, AREAS WITH OVERDRAFT PROBLEMS WILL NOT EXPERIENCE RELIEF FROM PREVAILING CONDITIONS, AND GROUND WATER USE WILL EXCEED REPLENISHMENT IN SOME LOCAL AREAS, ESPECIALLY ON THE WEST SIDE OF THE SAN JOAQUIN VALLEY.

THE FOLLOWING TABULATION SUMMARIZES RUNOFF FORECASTS FOR SAN JOAQUIN VALLEY STREAMS FOR BOTH THE WATER YEAR AND THE APRIL-JULY SNOWMELT PERIOD. THE LIMITS ARE ALSO SHOWN FOR AN 80 PERCENT PROBABILITY RANGE FOR APRIL-JULY RUNOFF. THIS MEANS THAT THERE IS AN 80 PERCENT PROBABILITY THAT THE RUNOFF WILL FALL WITHIN THE INDICATED LIMITS.

SAN JOAQUIN VALLEY
STREAMFLOW FORECASTS

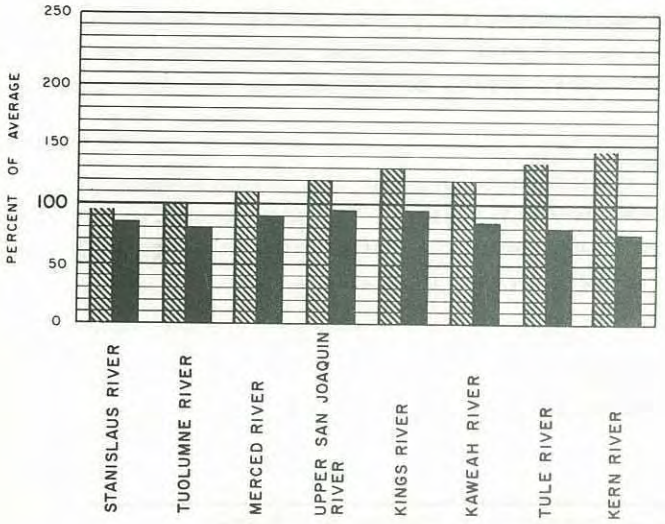
WATERSHED AND STATION	MARCH 1, 1963 - FORECASTS OF UNIMPAIRED RUNOFF				
	1962-63 WATER YEAR 1/		APRIL 1 - JULY 31 1/		APRIL 1-JULY 31 80% PROB. RANGE
	ACRE-FEET	% AVERAGE	ACRE-FEET	% AVERAGE	ACRE-FEET
STANISLAUS, INFLOW TO MELONES	730,000	66	330,000	45	150,000 TO 560,000
TUOLUMNE, INFLOW TO DON PEDRO	1,247,000	69	640,000	53	350,000 TO 1,050,000
MERCED, INFLOW TO EXCHEQUER	655,000	69	350,000	56	240,000 TO 580,000
SAN JOAQUIN, INFLOW TO FRIANT	1,290,000	76	820,000	67	500,000 TO 1,280,000
KINGS, INFLOW TO PINE FLAT	1,200,000	76	770,000	65	420,000 TO 1,150,000
KAWEAH NEAR THREE RIVERS 2/	280,000	72	125,000	47	40,000 TO 230,000
TULE, INFLOW TO SUCCESS	72,000	54	15,000	26	5,000 TO 45,000
KERN NEAR BAKERSFIELD	510,000	74	280,000	63	150,000 TO 500,000

1/ ASSUMING NORMAL PRECIPITATION SUBSEQUENT TO MARCH 1, 1963.
2/ NOT CORRECTED FOR UPSTREAM IMPAIRMENTS.

SAN JOAQUIN VALLEY
CENTRAL VALLEY AREA

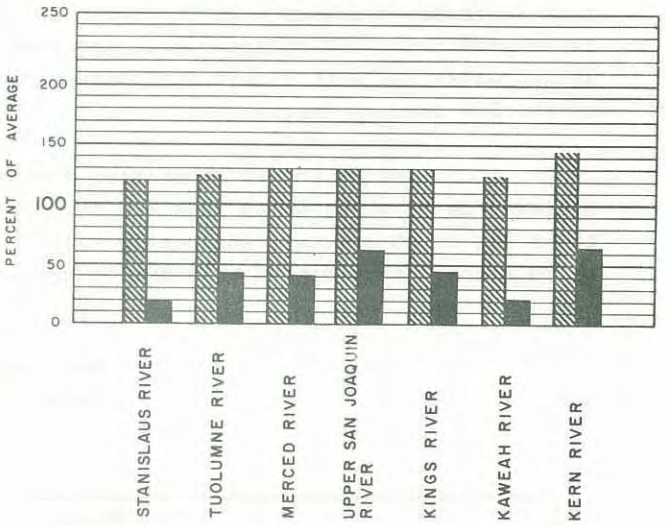
PRECIPITATION

SEASONAL PRECIPITATION
IN PERCENT OF AVERAGE TO DATE



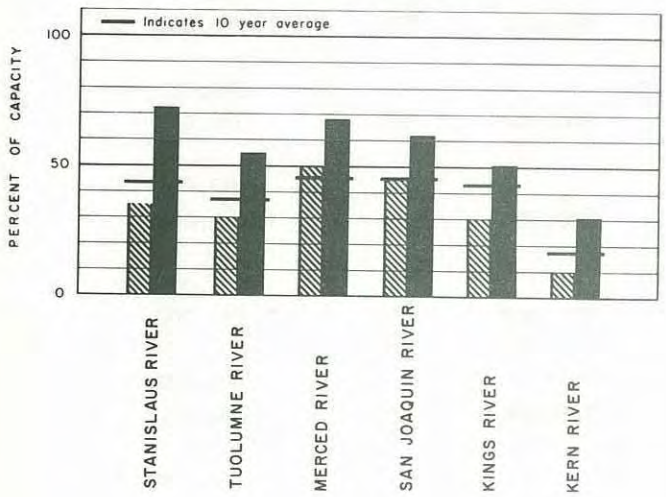
SNOWPACK

SNOWPACK WATER CONTENT
IN PERCENT OF AVERAGE TO DATE



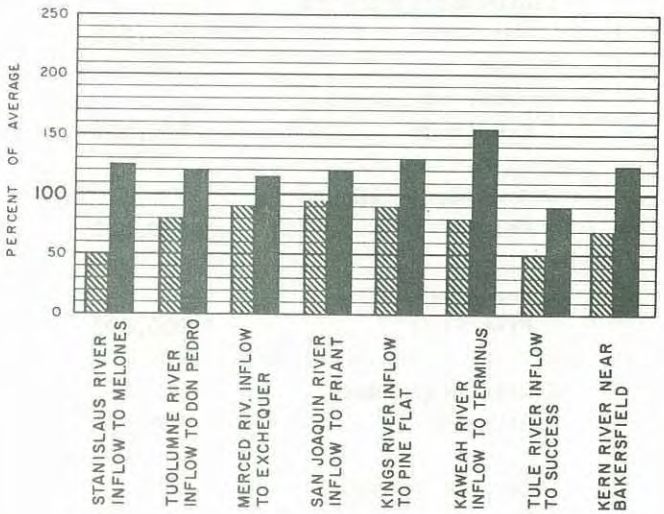
RESERVOIR STORAGE

CONTENTS OF MAJOR RESERVOIRS
IN PERCENT OF CAPACITY



STREAMFLOW

ACCUMULATED UNIMPAIRED RUNOFF SINCE OCTOBER 1
IN PERCENT OF AVERAGE TO DATE

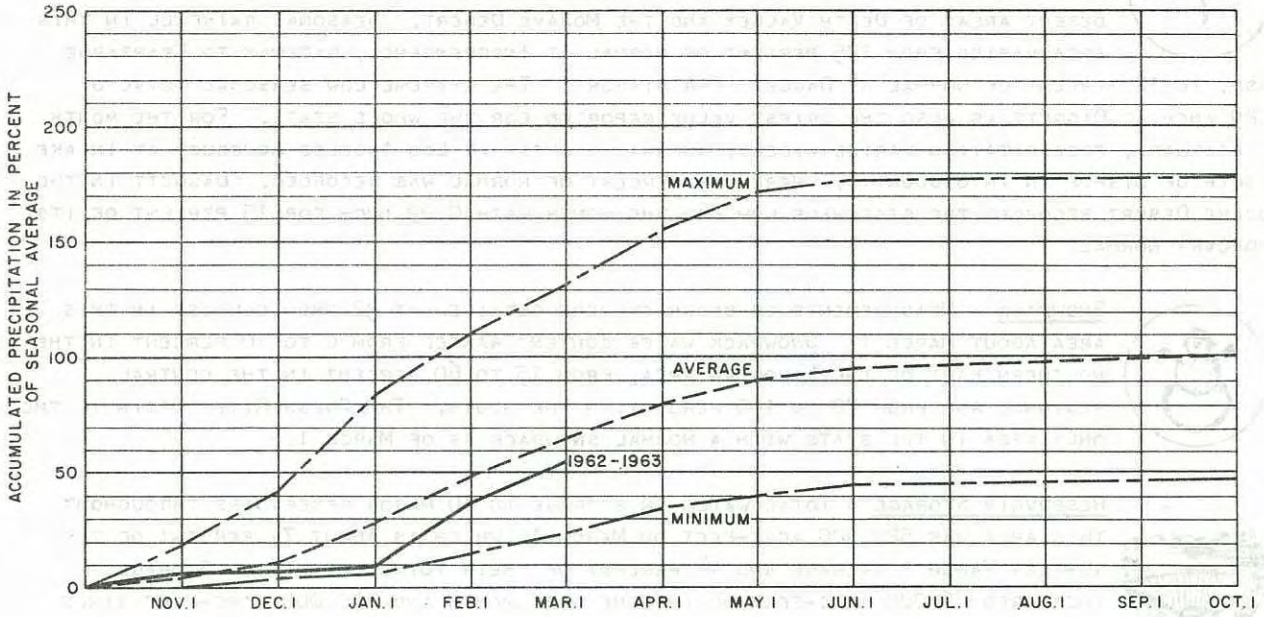


MARCH 1, 1962
MARCH 1, 1963

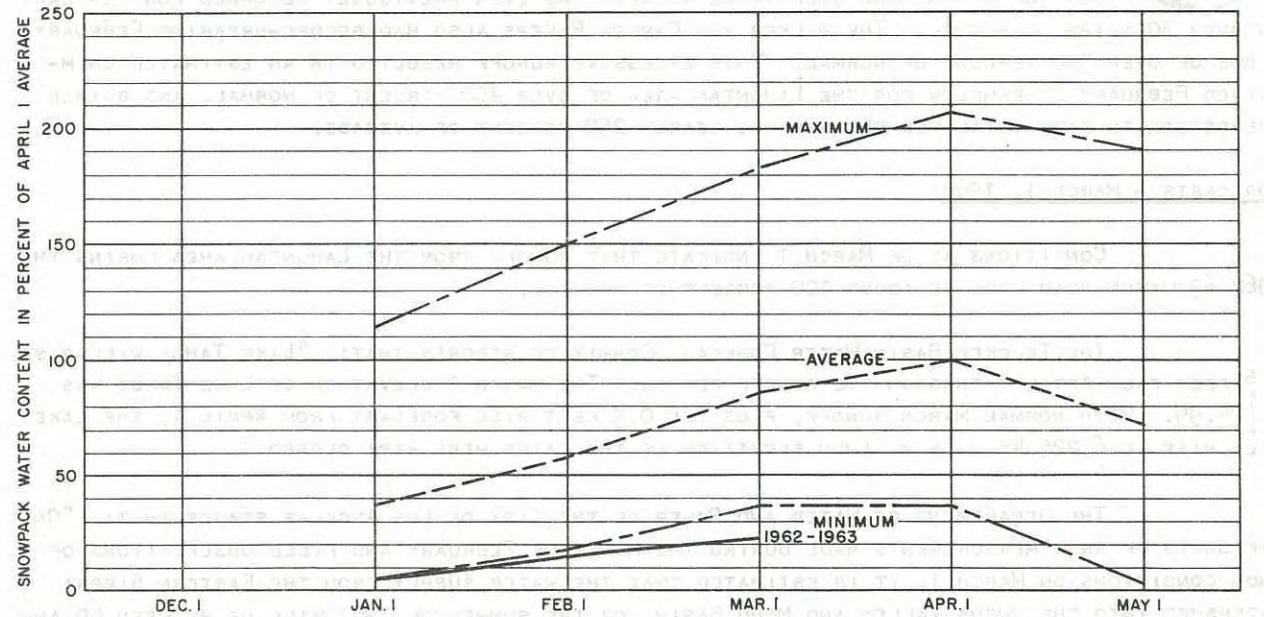
STATUS OF WATER SUPPLY

SAN JOAQUIN VALLEY
CENTRAL VALLEY AREA

PRECIPITATION



SNOWPACK ACCUMULATION



PRECIPITATION AND SNOWPACK ACCUMULATION

LAHONTAN AREA

PRECIPITATION - IN THE LAHONTAN AREA, PRECIPITATION WAS 110 PERCENT OF NORMAL FOR THE PERIOD OCTOBER 1, 1962, TO MARCH 1, 1963. ALL DRAINAGE BASINS IN THE AREA WERE NORMAL OR ABOVE, WITH THE EXCEPTION OF THE CARSON DRAINAGE AND THE DESERT AREAS OF DEATH VALLEY AND THE MOJAVE DESERT. SEASONAL RAINFALL IN THIS AREA VARIED FROM 275 PERCENT OF NORMAL AT INDEPENDENCE, GATEWAY TO KEARSARGE PASS, TO 12 PERCENT OF NORMAL AT DAGGETT FAA AIRPORT. THE EXTREME LOW SEASONAL TOTAL OF 0.29 INCH AT DAGGETT IS ALSO THE DRIEST VALUE REPORTED FOR THE WHOLE STATE. FOR THE MONTH OF FEBRUARY, PRECIPITATION VARIED WIDELY, AND WAS HIGHEST AT LOS ANGELES AQUEDUCT AT INTAKE (SOUTH OF BISHOP IN INYO COUNTY), WHERE 769 PERCENT OF NORMAL WAS RECORDED. DAGGETT IN THE MOJAVE DESERT RECORDED THE STATEWIDE LOW FOR THE MONTH WITH 0.09 INCH FOR 15 PERCENT OF ITS FEBRUARY NORMAL.

SNOWPACK - MEASUREMENTS OF SNOWPACK WERE OBTAINED AT 32 SNOW COURSES IN THIS AREA ABOUT MARCH 1. SNOWPACK WATER CONTENT RANGED FROM 0 TO 10 PERCENT IN THE NORTHERN PART OF THE LAHONTAN AREA, FROM 15 TO 60 PERCENT IN THE CENTRAL REGIONS, AND FROM 70 TO 100 PERCENT IN THE SOUTH. THE OWENS RIVER BASIN IS THE ONLY AREA IN THE STATE WITH A NORMAL SNOWPACK AS OF MARCH 1.

RESERVOIR STORAGE - TOTAL WATER IN STORAGE IN 10 MAJOR RESERVOIRS THROUGHOUT THIS AREA WAS 520,300 ACRE-FEET ON MARCH 1, WHICH IS ABOUT 74 PERCENT OF THE 10-YEAR MARCH 1 AVERAGE AND 44 PERCENT OF THEIR TOTAL CAPACITY. STORAGE INCREASED 89,000 ACRE-FEET DURING THE LAST MONTH AND 270,000 ACRE-FEET SINCE ONE YEAR AGO. THE WATER SURFACE ELEVATION OF LAKE TAHOE WAS 6,224.95 FEET ON MARCH 1, AS COMPARED WITH 6,223.50 FEET ON MARCH 1, 1962.

STREAMFLOW - IN LAST MONTH'S REPORT IT WAS POINTED OUT THAT RUNOFF IN THE TRUCKEE RIVER FOR THE MONTHS OF OCTOBER AND JANUARY OF THE CURRENT WATER YEAR RANKED HIGHEST AND FOURTH HIGHEST OF RECORD FOR THESE RESPECTIVE MONTHS. FEBRUARY FLOW IN THIS RIVER WAS EVEN MORE IMPRESSIVE, BEING MORE THAN 550 PERCENT OF NORMAL AND OVER TWICE AS GREAT AS EVER PREVIOUSLY RECORDED FOR FEBRUARY IN OVER 50 YEARS OF RECORD. THE WALKER AND CARSON RIVERS ALSO HAD RECORD-BREAKING FEBRUARY FLOWS OF OVER 500 PERCENT OF NORMAL. THIS EXCESSIVE RUNOFF RESULTED IN AN ESTIMATED UNIMPAIRED FEBRUARY STREAMFLOW FOR THE LAHONTAN AREA OF OVER 400 PERCENT OF NORMAL, AND RAISED THE SEASON TO DATE TOTAL FOR THE AREA TO NEARLY 250 PERCENT OF AVERAGE.

FORECASTS - MARCH 1, 1963

CONDITIONS AS OF MARCH 1 INDICATE THAT RUNOFF FROM THE LAHONTAN AREA DURING THE 1962-63 WATER YEAR WILL BE ABOUT 100 PERCENT OF AVERAGE.

THE TRUCKEE BASIN WATER FORECAST COMMITTEE REPORTS THAT: "LAKE TAHOE WILL RISE 0.3 FEET FROM APRIL 1 THROUGH THE RUNOFF PERIOD. THE MARCH 1 ELEVATION OF LAKE TAHOE WAS 6,224.95. WITH NORMAL MARCH RUNOFF, PLUS THE 0.3 FEET RISE FORECAST FROM APRIL 1, THE LAKE WILL RISE TO 6,225.45 AS A MAXIMUM ELEVATION IF THE GATES WERE KEPT CLOSED."

THE DEPARTMENT OF WATER AND POWER OF THE CITY OF LOS ANGELES STATES THAT: "ON THE BASIS OF SNOW MEASUREMENTS MADE DURING THE MONTH OF FEBRUARY AND FIELD OBSERVATIONS OF SNOW CONDITIONS ON MARCH 1, IT IS ESTIMATED THAT THE WATER SUPPLY FROM THE EASTERN SIERRA WATERSHED INTO THE OWENS VALLEY AND MONO BASIN FOR THE SUMMER OF 1963 WILL BE BETWEEN 60 AND 70 PERCENT OF NORMAL."

LAHONTAN AREA

THE FOLLOWING TABULATION SUMMARIZES UNIMPAIRED RUNOFF FORECASTS FOR LAHONTAN AREA STREAMS FOR THE APRIL-JULY SNOWMELT PERIOD. FORECASTS IN THIS AREA ARE PROVIDED BY NEVADA COOPERATIVE SNOW SURVEYS, CALIFORNIA COOPERATIVE SNOW SURVEYS, TRUCKEE BASIN WATER FORECAST COMMITTEE, AND THE DEPARTMENT OF WATER AND POWER OF THE CITY OF LOS ANGELES AS INDICATED.

WATERSHED, STREAM, AND STATION	SOURCE OF FORECAST	APRIL-JULY RUNOFF		
		AVERAGE IN ACRE-FEET 1/	FORECAST FOR 1963	
			IN ACRE-FEET	IN PERCENT OF AVERAGE
MILL CREEK ABOVE DIVERSIONS	CCSS-NCSS	-	2,600	43
DEEP CREEK ABOVE DIVERSIONS	CCSS-NCSS	-	1,800	43
EAGLE CREEK AT EAGLEVILLE	CCSS-NCSS	-	2,800	48
LITTLE TRUCKEE RIVER AT BOCA	TBWC	86,000	24,000	28
TRUCKEE RIVER AT FARAD 2/	TBWC	255,000	70,000	27
LAKE TAHOE RISE 2/ 3/	TBWC	1.50 FT.	0.3	20
EAST CARSON RIVER NEAR GARDNERVILLE	NCSS	189,000	60,000	32
WEST CARSON RIVER AT WOODFORDS	NCSS	54,000	16,000	30
CARSON RIVER NEAR CARSON CITY	NCSS	184,000	35,000	19
CARSON RIVER NEAR FORT CHURCHILL	NCSS	171,000	25,000	15
EAST WALKER RIVER NEAR BRIDGEPORT 4/	NCSS	61,000	30,000	49
WEST WALKER RIVER NEAR COLEVILLE	NCSS	148,000	80,000	54
OWENS RIVER BELOW LONG VALLEY DAM	LADWP	68,000 5/	35,000	52

1/ COMPUTED FOR THE PERIOD 1943-1957.
2/ ASSUMING LAKE TAHOE GATES CLOSED.
3/ NOT CORRECTED FOR UPSTREAM IMPAIRMENTS.
4/ APRIL THROUGH AUGUST.
5/ 50-YEAR AVERAGE, 1908-1957.

IMPACT

IN THE NORTHERN PORTION OF THIS AREA, THE PROSPECT OF BELOW NORMAL RUNOFF THIS COMING SUMMER, COUPLED WITH THE AREA'S LIMITED STORAGE CAPACITY, WILL RESULT IN DIMINISHING IRRIGATION SUPPLIES AT AN EARLIER-THAN-USUAL DATE. IN THE CENTRAL LAHONTAN AREA, WATER USERS WITH ACCESS TO STORED WATER WILL HAVE ADEQUATE SUPPLIES. RESERVOIR STORAGE SPACE IN THIS AREA HAS CONTINUED TO FILL DUE TO THE RECENT RAINSTORMS. HOWEVER, EARLY RECESSION OF UNREGULATED STREAMFLOW CAN BE EXPECTED AND LATE FALL RUNOFF HERE, AND IN AREAS TO THE NORTH, COULD APPROACH RECORD MINIMUMS. IN THE SOUTHERN LAHONTAN AREA, THE MONO LAKE AND OWENS VALLEY REGIONS WILL APPROACH HAVING A NORMAL WATER SUPPLY CONDITION DUE TO RETENTION OF SNOW IN THE HIGH EASTERN SIERRA WATERSHEDS. NO UNUSUAL WATER SUPPLY PROBLEMS SHOULD BE ENCOUNTERED IN THIS AREA.

SOUTH COASTAL AREA

PRECIPITATION - In the South Coastal area, precipitation was about 40 percent of normal for the period October 1, 1962, to March 1, 1963. It varied from 19 percent of normal at San Diego, on the south end of the area, to 65 percent of normal at Long Beach. During the month of February, two storms affected Southern California. The storm of January 31 to February 2 deposited light precipitation, but it was the storm of February 9 to 14 that accounted for the majority of the precipitation for the month. Although percent of normal figures for selected precipitation stations increased from January 31, 1963, to February 28, 1963, the entire area remains much below normal for the season. San Diego reported the driest July through February period in record, dating back to 1850. Barstow, with .44 inch of precipitation, reports the second driest year of history, and Los Angeles is also at a near-record low.

SNOWPACK - No snow course measurements have been received for this area at this time; however, a mid-February measurement was made on the Christmas Tree snow course in the Santa Ana River Basin. At that time there were 18 inches of snow on the course. This compares rather unfavorably with the 70 inches recorded in mid-February last year when this area experienced one of its heaviest snowpacks of record.

RESERVOIR STORAGE - In general, storage in percent of capacity as of March 1, in major reservoirs supplied by local water, was slightly more than the storage on February 1 but lower than on March 1, 1962. Present storage ranged from 88 percent of capacity for reservoirs on the Santa Ynez River system to a minimum of 1 percent for reservoirs on the Santa Maria River. Storage in 12 City of San Diego reservoirs amounted to about 91,300 acre-feet of local and imported Colorado River water; approximately the same quantity was reported both last month and on March 1, 1962. The elevation of the surface of the Salton Sea on March 1, 1963, was 232.05 feet below sea level. This is .90 foot higher than the elevation on March 1, 1962, and also represents an increase of .40 foot during the month of February, 1963.

STREAMFLOW - Runoff since October 1, 1962, remains far below normal in coastal Southern California, reflecting the subnormal precipitation. The estimated unimpaired runoff for the season to date was only 25 percent of normal, and for the month of February was but 35 percent of normal.

FORECASTS - MARCH 1, 1963

Conditions at this time indicate that with normal precipitation for the remainder of the season, water year runoff in the South Coastal area will be 40 percent of average. The current water year has proved to be one of the very dry ones in a dry Southern California, and unless at least normal rainfall occurs during the months of March and April, the year may be drier than the record-breaking years of 1959 and 1961.

SOUTH COASTAL AREA

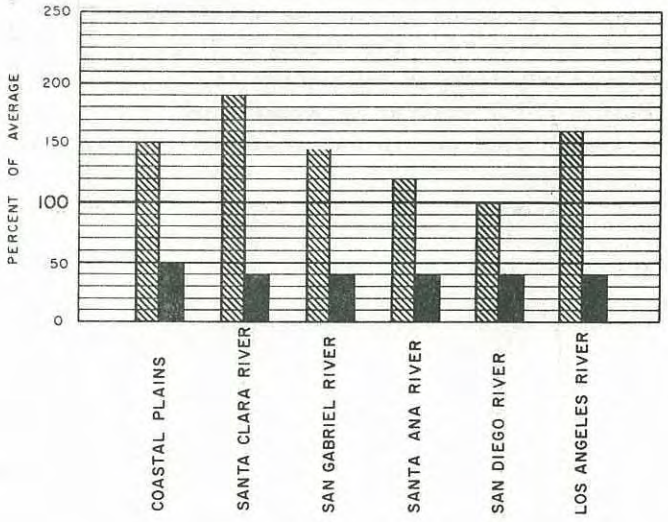
IMPACT

UNLESS SUBSTANTIAL IMPROVEMENT IN THE FORM OF PRECIPITATION OCCURS, DECREASES IN RESERVOIR STORAGE AND GROUND WATER LEVELS WILL OCCUR DURING THE REMAINDER OF THE CURRENT WATER YEAR. IN AREAS DEPENDENT ON IMPORTATION FROM THE COLORADO RIVER, THE TREND OF INCREASING WATER DEMANDS WHICH HAS BEEN ESTABLISHED IN PAST YEARS IS EXPECTED TO CONTINUE. RESERVOIR STORAGE IN LAKE MEAD WAS 135 PERCENT OF AVERAGE ON MARCH 1, INDICATING THAT THE MAJOR SOURCE OF IMPORTED SUPPLIES WAS IN SATISFACTORY CONDITION.

SOUTH COASTAL AREA

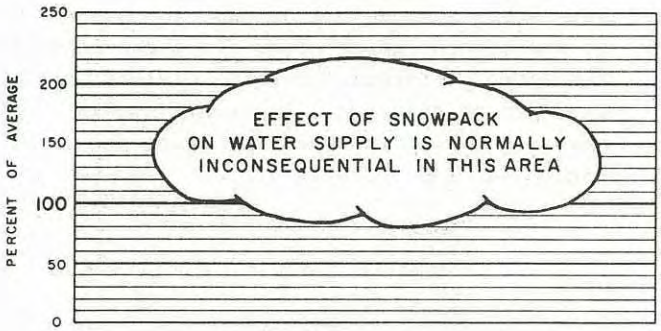
PRECIPITATION

SEASONAL PRECIPITATION
IN PERCENT OF AVERAGE TO DATE



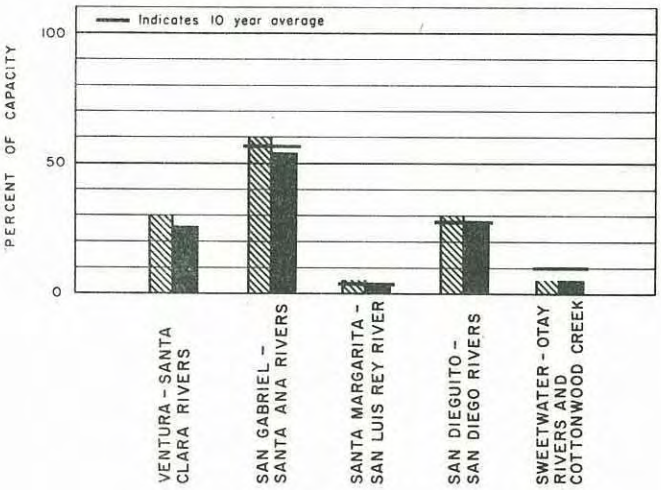
SNOWPACK

SNOWPACK WATER CONTENT
IN PERCENT OF AVERAGE TO DATE



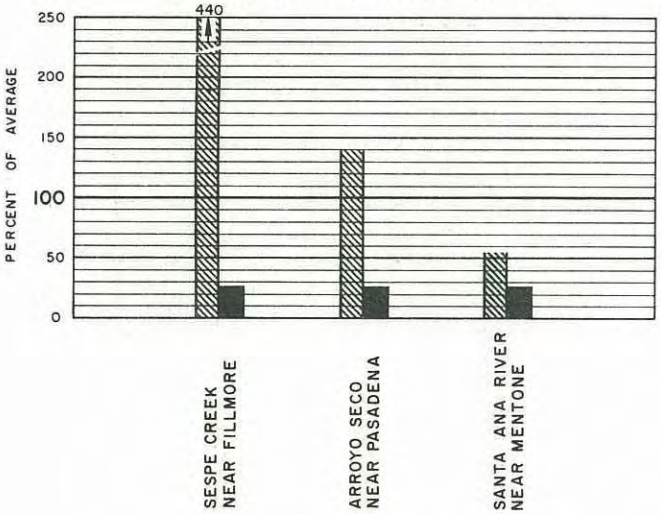
RESERVOIR STORAGE

CONTENTS OF MAJOR RESERVOIRS
IN PERCENT OF CAPACITY



STREAMFLOW

ACCUMULATED UNIMPAIRED RUNOFF SINCE OCTOBER 1
IN PERCENT OF AVERAGE TO DATE

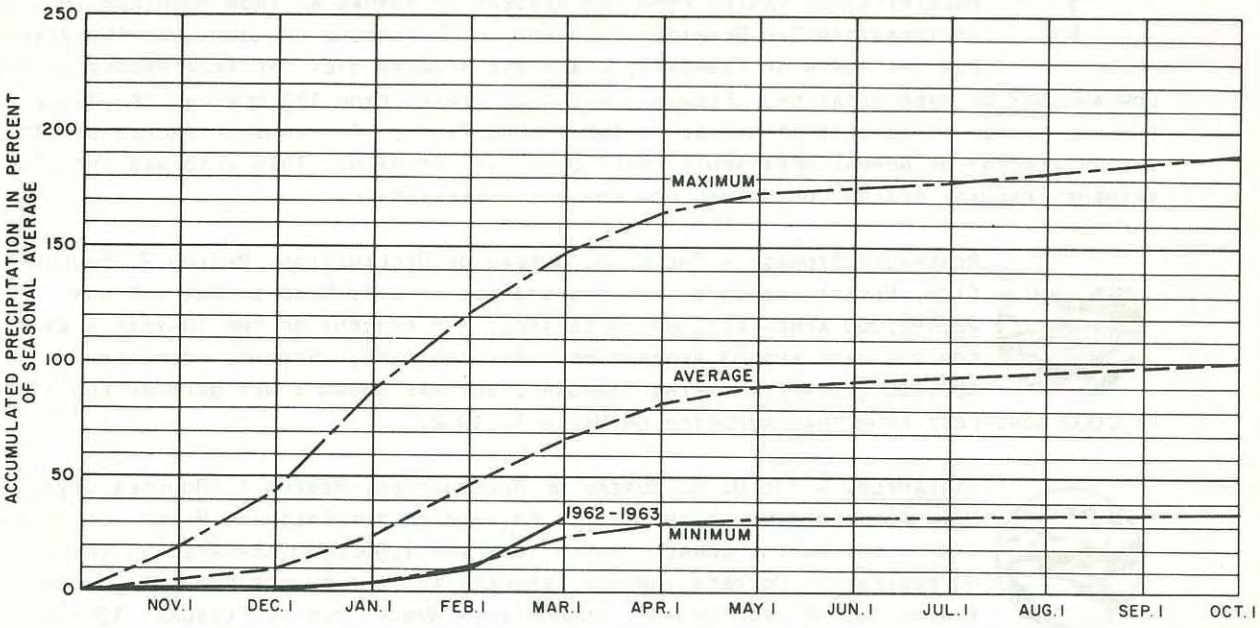


MARCH 1, 1962
MARCH 1, 1963

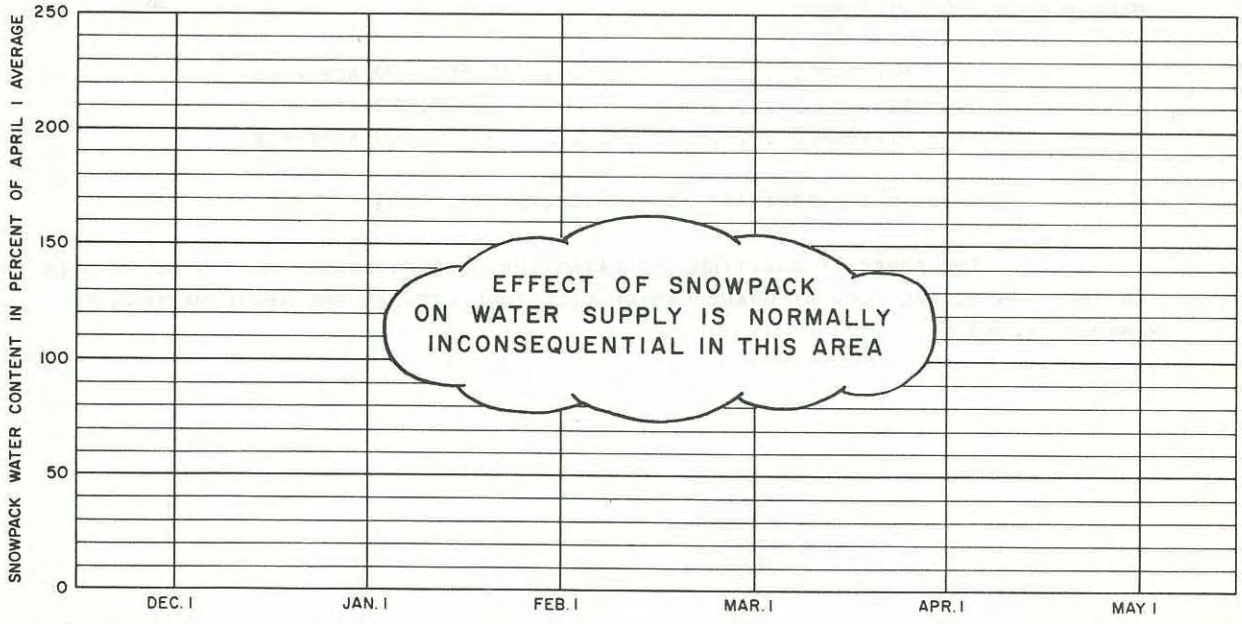
STATUS OF WATER SUPPLY

SOUTH COASTAL AREA

PRECIPITATION



SNOWPACK ACCUMULATION



PRECIPITATION AND SNOWPACK ACCUMULATION

COLORADO DESERT AREA

PRECIPITATION - IN THE COLORADO DESERT AREA, PRECIPITATION WAS ABOUT 70 PERCENT OF NORMAL FOR THE PERIOD OCTOBER 1, 1962, TO MARCH 1, 1963. PRECIPITATION VARIED FROM 123 PERCENT OF NORMAL AT IRON MOUNTAIN IN SOUTHEASTERN SAN BERNARDINO COUNTY TO 54 PERCENT OF NORMAL AT IMPERIAL. FOR THE MONTH OF FEBRUARY, SCATTERED SHOWERS OVER THE AREA PRODUCED VERY LOW AMOUNTS OF PRECIPITATION. FEBRUARY RAINFALL VARIED FROM 153 PERCENT OF NORMAL AT THERMAL TO ONLY 14 PERCENT OF NORMAL AT TWENTYNINE PALMS. IN TERMS OF INCHES OF WATER, THE 14 PERCENT OF NORMAL REPRESENTED ONLY 0.10 INCH OF RAIN. THIS ALSO WAS THE EXTREME FEBRUARY PERCENT OF NORMAL LOW FOR THE ENTIRE STATE.

RESERVOIR STORAGE - THE U. S. BUREAU OF RECLAMATION, REGION 3, BOULDER CITY, NEVADA, REPORTS THAT THE STORAGE IN LAKE MEAD ON MARCH 1 WAS 22,496,000 ACRE-FEET, WHICH IS ABOUT 135 PERCENT OF THE 10-YEAR AVERAGE FOR THE DATE AND 83 PERCENT OF TOTAL CAPACITY. STORAGE DECREASED BY 180,000 ACRE-FEET DURING FEBRUARY, BUT HAS SHOWN A NET GAIN OF ABOUT 425,000 ACRE-FEET FROM THAT REPORTED ON MARCH 1, 1962.

STREAMFLOW - THE U. S. BUREAU OF RECLAMATION, REGION 3, BOULDER CITY, NEVADA, REPORTS THAT THE RUNOFF TO DATE OF THE COLORADO RIVER NEAR GRAND CANYON DURING THE CURRENT WATER YEAR WAS 1,902,500 ACRE-FEET. THIS IS 90 PERCENT OF OCTOBER THROUGH FEBRUARY AVERAGE RUNOFF FOR THE 34-YEAR PERIOD 1922-23 TO 1955-56, INCLUSIVE. RUNOFF DURING FEBRUARY 1963 WAS 94 PERCENT OF AVERAGE.

FORECAST - MARCH 1, 1963

THE U. S. BUREAU OF RECLAMATION, REGION 3, BOULDER CITY, NEVADA, FORECASTS THAT FLOW IN THE COLORADO RIVER NEAR GRAND CANYON, ARIZONA, DURING THE PERIOD APRIL THROUGH JULY 1963 WILL BE:

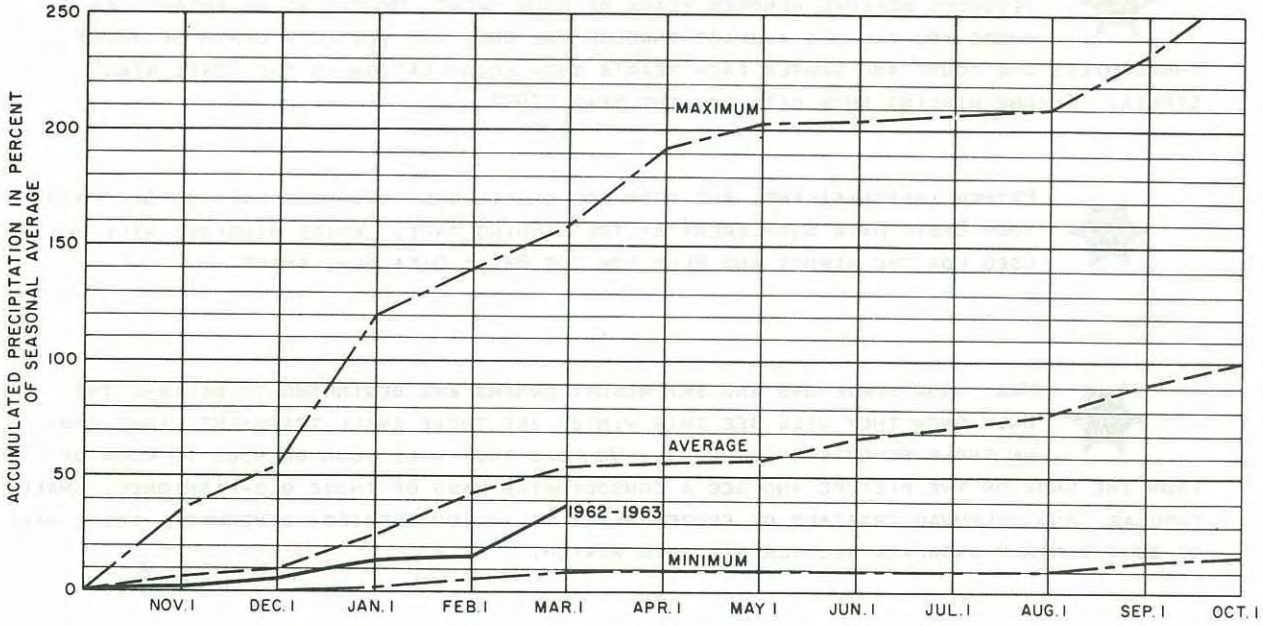
MAXIMUM	10,500,000 ACRE-FEET
MEAN	7,100,000 ACRE-FEET
MINIMUM	3,700,000 ACRE-FEET

THIS IS THE FORECAST AS OF FEBRUARY 11, 1963.

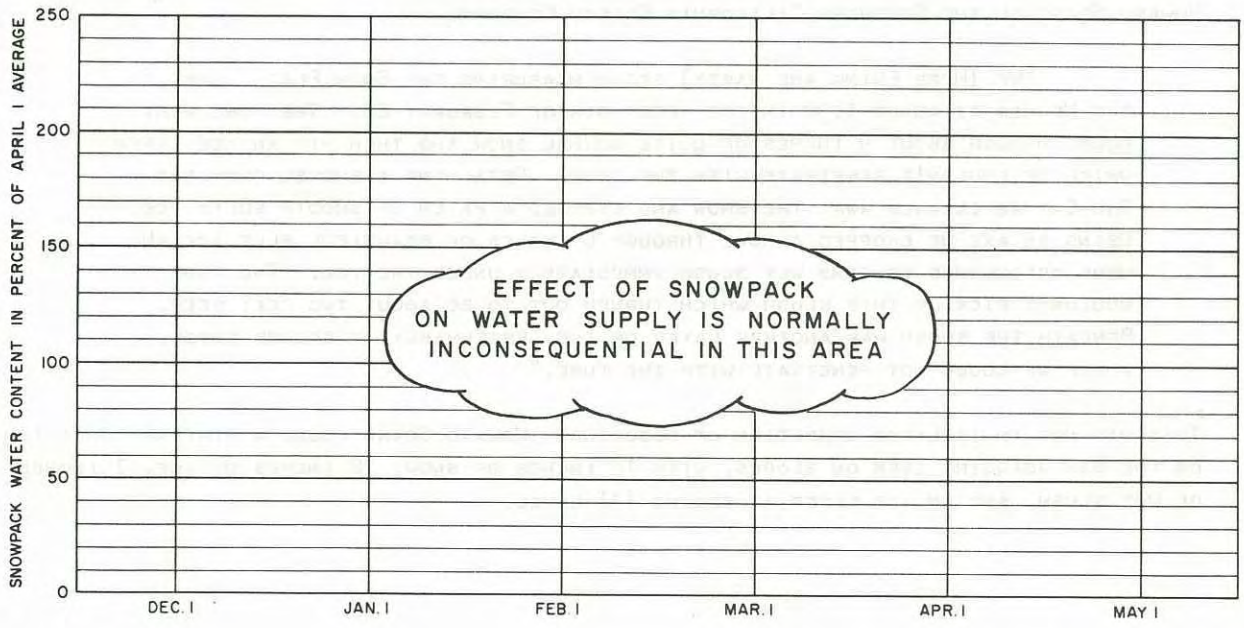
THE FORECAST EQUATION INDICATES THAT THE PROBABILITY IS NINE CHANCES IN TEN THAT THE ACTUAL FLOW AT GRAND CANYON WILL FALL BETWEEN THE ABOVE MAXIMUM AND MINIMUM VALUES.

COLORADO DESERT AREA

PRECIPITATION



SNOWPACK ACCUMULATION



PRECIPITATION AND SNOWPACK ACCUMULATION

SNOW LINES

HAVE YOU HEARD OF THE SNOW SURVEYOR WHO WENT OUT ONE DAY AND SAMPLED AND RECORDED SEVERAL HUNDRED YEARS OF SNOW DATA? HE DID IT IN ANTARCTICA WHERE YOU CAN DIG A SHAFT THROUGH THE SNOW AND ICE TO A DEPTH OF ABOUT THREE MILES AND COUNT AND SAMPLE EACH YEAR'S SNOW ACCUMULATION IN THE "TREE RING" STRATA. ANYONE MISSING SNOW DATA FOR THE YEAR 1792?

RATHER INSIGNIFICANT, BUT FROM NOW ON YOU CAN TELL YOUR MAIN REPORT FROM YOUR BASIC DATA SUPPLEMENT BY THE BINDING TAPE. WHITE BINDINGS WILL BE USED FOR THE REPORT AND BLUE FOR THE BASIC DATA SUPPLEMENT.

MANY SNOW SURVEYORS AND SKI RESORT OWNERS ARE BEGINNING TO BELIEVE THE ONLY SNOW THEY WILL SEE THIS WINTER ARE THOSE SMALL TRANSIENT LIGHT SPOTS ON THEIR TELEVISION SCREENS. WE HOPE THEY WILL SOON BE ABLE TO LOOK UP FROM THE SNOW ON THE PICTURE AND SEE A CONSOLIDATED MASS OF THOSE OLD-FASHIONED, SMALL, TABULAR, AND COLUMNAR CRYSTALS OF FROZEN WATER PILING UP OUTSIDE--OTHERWISE, THERE WILL BE SOME MINIMUM SNOWPACK RECORDS SET THIS WINTER.

BECAUSE OF ICE LAYERS, HIGH DENSITIES, AND DEEP SNOW (EXCEPT FOR THIS YEAR), CALIFORNIA QUITE OFTEN HAS SOME OF THE TOUGHEST SNOW IN THE UNITED STATES TO MEASURE. IT SEEMS WE SET SOME SORT OF NEW RECORD THIS YEAR, HOWEVER.

THE FOLLOWING CONDITION WAS FIRST REPORTED BY HERB EWING OF YOSEMITE PARK, AND SUBSEQUENTLY CONFIRMED AS A COMMON CONDITION ON THE UPPER SAN JOAQUIN WATERSHED BY HOWARD SPANO OF THE SOUTHERN CALIFORNIA EDISON COMPANY.

> "WE (HERB EWING AND PARTY) BEGAN MEASURING THE SNOW FLAT COURSE ON THE MERCED AT ABOUT 1:30 IN THE AFTERNOON OF FEBRUARY 25. THE TUBE WENT DOWN THROUGH ABOUT 9 INCHES OF QUITE NORMAL SNOW AND THEN HIT AN ICE LAYER WHICH WE COULDN'T PENETRATE WITH THE TUBE. OBTAINING A SHOVEL FROM THE SNO-CAT WE CLEARED AWAY THE SNOW AND EXPOSED A PATCH OF SMOOTH SOLID ICE. USING AN AXE WE CHOPPED A HOLE THROUGH 6 INCHES OF BEAUTIFUL BLUE ICE AND WERE ASTONISHED TO FIND WET SLUSH IMMEDIATELY UNDER THE ICE. THE TUBE WOULDN'T PICK UP THIS SLUSH WHICH TURNED OUT TO BE ABOUT TWO FEET DEEP. BENEATH THE SLUSH WAS ANOTHER LAYER OF ICE, PRESUMABLY AT GROUND LEVEL, WHICH WE COULD NOT PENETRATE WITH THE TUBE."

THIS WAS NOT AN ISOLATED CONDITION OF FLOODING. HOWARD SPANO FOUND A SIMILAR CONDITION ON THE SAN JOAQUIN, EVEN ON SLOPES, WITH 18 INCHES OF SNOW, 12 INCHES OF ICE, 7 INCHES OF WET SLUSH, AND AN ICE LAYER AT GROUND (?) LEVEL.

CALIFORNIA COOPERATIVE SNOW SURVEYS

THE RESOURCES AGENCY OF CALIFORNIA

Department of Water Resources

BULLETIN No. 120-63

WATER CONDITIONS IN CALIFORNIA

REPORT No. 2-S: Basic Data Supplement

EDMUND G. BROWN
Governor
State of California

HUGO FISHER
Administrator
The Resources Agency of California

WILLIAM E. WARNE
Director
Department of Water Resources

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FOREWORD

This supplement contains basic data for Bulletin No. 120-63, Report No. 2, entitled "Water Conditions in California." These reports are prepared pursuant to Section 228, Article 2, Chapter 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."

This supplement contains snow measurements, available precipitation records, stream flow data for representative water courses, reports of water in storage in major reservoirs, and other pertinent data used in the preparation of the report.

This supplement is being forwarded to all cooperators in the water conditions program and will be made available to other interested parties upon specific request.

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COVER

THIS PHOTOGRAPH SHOWS SEVERAL TYPES OF INSTRUMENTATION USED IN COLLECTING BASIC DATA FOR USE IN ANALYZING WATER CONDITIONS IN CALIFORNIA. SHOWN IN THE PHOTOGRAPH ARE A SACRAMENTO TYPE SEASONAL PRECIPITATION STORAGE GAGE (FOREGROUND), A RADIOACTIVE TYPE SNOW GAGE (CENTER), AND A SNOW DEPTH MARKER FOR AERIAL OBSERVATIONS (TO RIGHT OF RADIOACTIVE GAGE). THIS EQUIPMENT, LOCATED AT STATE LAKES IN THE KINGS RIVER BASIN, IS MAINTAINED BY THE U. S. CORPS OF ENGINEERS.

AGENCIES COOPERATING WITH THE DEPARTMENT 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

- CALIFORNIA ELECTRIC POWER COMPANY
- PACIFIC GAS AND ELECTRIC COMPANY
- SIERRA PACIFIC POWER COMPANY
- SOUTHERN CALIFORNIA EDISON COMPANY

MUNICIPALITIES

- CITY OF LOS ANGELES - DEPARTMENT OF WATER AND POWER
- CITY OF PORTERVILLE
- CITY OF SAN FRANCISCO - PUBLIC UTILITIES COMMISSION

ORGANIZED PUBLIC AGENCIES

- BUENA VISTA WATER STORAGE DISTRICT
- CAMP FAR WEST IRRIGATION DISTRICT
- CENTRAL CALIFORNIA IRRIGATION DISTRICT
- EAST BAY MUNICIPAL UTILITY DISTRICT
- KAWEAH DELTA WATER CONSERVATION DISTRICT
- KAWEAH RIVER ASSOCIATION
- KINGS RIVER WATER ASSOCIATION
- LOS ANGELES COUNTY FLOOD CONTROL DISTRICT
- LOWER TULE RIVER IRRIGATION DISTRICT
- MERCED IRRIGATION DISTRICT
- MODESTO IRRIGATION DISTRICT
- NEVADA IRRIGATION DISTRICT
- OAKDALE IRRIGATION DISTRICT
- OMOCHUMNE-HARTNELL WATER DISTRICT
- PORTERVILLE IRRIGATION DISTRICT
- SACRAMENTO MUNICIPAL UTILITY DISTRICT
- SAUCELITO IRRIGATION DISTRICT
- SOUTH SAN JOAQUIN IRRIGATION DISTRICT
- ST. JOHNS RIVER ASSOCIATION
- TERRA BELLA IRRIGATION DISTRICT
- TURLOCK IRRIGATION DISTRICT
- VANDALIA IRRIGATION DISTRICT

PRIVATE ORGANIZATIONS

- J. G. BOSWELL COMPANY
- KERN COUNTY LAND COMPANY
- LIBERTY FARMS COMPANY
- MILLER & LUX, INC.
- UNITED HOP GROWERS OF CALIFORNIA, INC.

TABLE 1

PRECIPITATION DATA

Basin and Precipitation Station 1/	Elevation in Feet	Source of Data 2/	Precipitation						
			During February, 1963			From October 1, 1962, Through February 28, 1963			Average Water Year 3/ (Inches)
			Total For Month (Inches)	Average 3/ (Inches)	In Percent of Average	Season Total (Inches)	Average 3/ (Inches)	In Percent of Average	
NORTH COASTAL AREA									
Smith River Area									
Elk Valley	1711	USWB	9.25	10.98	84	45.10	55.99	81	76.25
Gasquet RS	384	USWB	11.97	12.33	97	55.44	62.84	88	85.57
Crescent City 11E	360	DWR	10.61	13.04	81	58.90	66.48	89	90.54
Crescent City 1N	40	USWB	7.28	8.84	82	35.96	43.55	83	62.57
Klamath River Area									
Tulelake Inspection Station	4408	DWR	1.47	1.77	83	12.90	10.17	127	15.94
Klamath Falls 2SSW, Oregon	4098	USBR	1.16	1.45	80	9.67	8.35	116	13.09
Tulelake	4034	USWB	1.29	1.07	121	8.56	6.14	139	9.62
Callahan RS	3136	USWB	3.87	2.88	134	19.68	13.81	142	19.44
Gazelle 4NNW	2730	DWR	2.08	1.15	181	12.58	6.28	200	10.05
Yreka	2625	USWB	4.30	2.15	200	17.19	11.66	147	17.32
Happy Camp RS	1090	USWB	8.45	7.27	116	38.77	37.04	105	50.44
Orleans	403	USWB	7.08	6.89	103	36.92	35.13	105	47.84
Orick Arcata Redwood Co	75	DWR	8.28	9.69	85	38.57	45.32	85	64.43
Trinity River Area									
Burnt Ranch 1S	2150	USWB	6.91	5.66	122	28.44	26.51	107	37.70
Weaverville RS	2050	USWB	6.61	5.47	121	27.73	25.62	108	34.89
Big Bar RS	1272	USWB	6.01	5.78	104	26.53	27.09	98	36.75
Eel River Area									
Mad River RS	2775	USWB	9.94	8.69	114	45.14	40.78	111	55.15
Old Harris	2200	DWR	-	11.75	-	-	55.19	-	74.12

TABLE 1 - PRECIPITATION DATA (CONTINUED)

Basin and Precipitation Station 1/	Elevation in Feet	Source of Data 2/	Precipitation						
			During February, 1963			From October 1, 1962, Through February 28, 1963			Average Water Year 3/
			Total For Month (Inches)	Average 3/ (Inches)	In Percent of Average	Season Total (Inches)	Average 3/ (Inches)	In Percent of Average	(Inches)
NORTH COASTAL AREA (CONTINUED)									
Eel River Area (Continued)									
Honor Camp #42	1875	DWR	7.30	10.57	69	48.74	53.92	90	73.43
Covelo	1385	USWB	5.45	6.24	87	25.83	28.35	91	38.18
Standish-Hickey State Park	850	USWB	9.09	10.84	84	46.89	50.92	92	68.38
Honeydew 2WSW	375	USWB	16.35	17.04	96	70.19	80.05	88	107.48
Upper Mattole	255	USWB	10.31	12.11	85	50.77	56.90	89	76.41
Blue Lake	105	DWR	7.59	8.76	87	32.46	37.68	86	52.37
Scotia	139	USWB	7.54	6.90	109	30.52	32.31	94	45.93
Fort Bragg	80	USWB	3.86	5.98	65	20.63	27.46	75	37.44
Eureka WB City	43	USWB	4.74	5.51	86	22.09	25.78	86	36.66
Russian River Area									
Cazadero	1040	USWB	13.48	12.59	107	57.66	55.23	104	73.75
Potter Valley PH	1014	PG&E	1.69	7.09	24	27.93	31.95	87	42.45
Ukiah	623	USWB	3.22	6.09	53	28.55	26.62	107	35.06
Boonville Maintenance Sta	375	USWB	7.32	6.65	110	27.93	29.06	96	38.28
Santa Rosa	167	USWB	4.22	5.01	84	22.71	21.24	107	28.71
Fort Ross	114	USWB	3.89	6.69	58	23.62	29.57	80	40.32
Healdsburg	102	USWB	3.99	6.69	60	34.03	28.91	118	38.16
SAN FRANCISCO BAY AREA									
Mount Hamilton	4206	USWB	-	4.69	--	-	19.12	--	27.04
Gerber Ranch	2150	USWB	5.47	3.09	177	15.98	12.59	127	17.80
Angwin Pac Union College	1815	USWB	4.61	6.76	68	37.93	28.56	133	38.03
Lagunitas Lake	805	MMWD	7.78	8.55	91	44.46	35.80	124	47.04
Livermore 2SSW	545	USWB	4.50	2.41	187	11.37	10.30	110	14.10

TABLE 1 - PRECIPITATION DATA (CONTINUED)

Basin and Precipitation Station 1/	Elevation in Feet	Source of Data 2/	Precipitation						
			During February, 1963			From October 1, 1962, Through February 28, 1963			Average Water Year 3/ (Inches)
			Total For Month (Inches)	Average 3/ (Inches)	In Percent of Average	Season Total (Inches)	Average 3/ (Inches)	In Percent of Average	
SAN FRANCISCO BAY AREA (CONTINUED)									
San Jose	70	CSJ	2.23	2.46	91	12.12	9.66	125	13.50
Napa State Hospital	60	USWB	3.79	4.26	89	23.77	17.39	137	23.25
San Francisco FOB	52	USWB	2.03	3.78	54	14.85	15.49	96	20.59
Redwood City	31	USWB	3.20	3.54	90	17.20	14.55	118	19.87
Oakland WB AP	3	USWB	2.64	3.30	80	16.96	13.18	129	17.81
CENTRAL COASTAL AREA									
Salinas River Area									
Priest Valley	2390	USWB	-	3.88	--	-	14.06	--	19.75
Paso Robles	700	USWB	3.79	2.41	157	11.52	9.45	122	13.31
San Bernardo Rancho	435	DWR	4.19	2.38	176	9.77	8.43	116	11.80
King City	320	USWB	1.68	2.17	77	10.26	7.37	139	10.31
San Luis Obispo Poly	300	USBR	-	4.14	--	-	15.80	--	21.57
Big Sur State Park	235	USWB	11.67	7.56	154	40.22	29.21	138	39.76
Salinas FAA AP	74	USWB	3.49	2.45	142	7.38	10.25	72	14.36
Pt. Piedras Blancas	32	USWB	-	3.34	--	-	12.97	--	17.76
Pajaro River Area									
Hollister	284	USWB	2.91	2.32	125	9.55	9.34	102	13.05
Santa Cruz	125	USWB	4.91	6.49	76	19.70	26.09	76	35.03
Watsonville Water Works	95	USWB	4.78	4.08	117	17.94	16.33	110	21.86
Santa Maria and Santa Ynez River Areas									
Ozena	3705	USWB	3.03	2.52	120	3.94	8.87	44	12.27
Cachuma Dam	781	USBR	5.69	3.96	144	6.99	13.91	50	19.28
Los Alamos	565	USWB	4.76	2.99	159	6.15	10.64	58	15.33
Santa Maria WB AP	238	USWB	3.30	2.49	133	5.09	9.48	54	13.42
Santa Barbara	100	USWB	5.39	3.81	141	7.72	13.39	58	18.56

TABLE 1 - PRECIPITATION DATA (CONTINUED)

Basin and Precipitation Station[1]	Elevation in Feet	Source of Data[2]	Precipitation						
			During February, 1963			From October 1, 1962, Through February 28, 1963			Average Water Year[3]
			Total For Month (Inches)	Average[3] (Inches)	In Percent of Average	Season Total (Inches)	Average[3] (Inches)	In Percent of Average	(Inches)
SOUTH COASTAL AREA									
Coastal Plain									
Los Angeles WB City	312	USWB	2.88	3.21	90	3.52	10.69	33	14.79
Santa Ana FS	115	USWB	2.86	3.06	93	3.04	10.62	29	14.75
Los Angeles WB AP	102	USWB	4.48	2.77	162	5.20	9.23	56	12.77
Laguna Beach	56	USWB	4.61	2.55	181	4.81	8.74	55	12.20
Ventura	45	USWB	4.70	2.96	159	5.72	10.65	54	14.80
Long Beach	34	USWB	5.68	2.83	201	6.17	9.43	65	13.06
San Diego WB AP	19	USWB	1.22	2.30	53	1.61	8.48	19	12.12
Santa Clara River									
Mint Canyon	2350	LACFCD	1.72	2.44	70	2.61	9.27	28	13.29
Saugus PP #1	2105	USWB	3.36	3.84	88	3.95	12.92	31	18.36
Dry Canyon Reservoir	1515	USWB	2.55	2.67	96	2.93	8.98	33	12.75
Santa Paula	282	USWB	5.44	3.94	138	6.55	12.99	50	18.13
Los Angeles River									
Loomis Ranch	4050	LACFCD	4.02	4.07	99	5.66	13.78	41	20.30
Haines Canyon Upper	3450	LACFCD	7.75	5.68	136	8.49	19.79	43	30.20
Big Tujunga Dam	2315	LACFCD	7.14	6.16	116	8.01	19.69	41	28.17
Arroyo Seco RS	1220	LACFCD	6.55	4.75	138	7.95	16.37	49	23.91
Burbank WB AP	699	USWB	4.17	3.36	124	4.68	11.40	41	15.85
San Gabriel River									
Big Pines Camp	6860	LACFCD	2.77	4.88	57	4.47	18.11	25	27.34
Mt. Wilson	5709	USWB	7.55	6.60	114	9.68	21.78	44	31.28
San Dimas Tanbark Flats	2720	LACFCD	6.43	5.73	112	7.55	19.39	39	28.14
Hoegee's	2650	LACFCD	9.51	8.72	109	11.71	28.43	41	40.96

TABLE 1 - PRECIPITATION DATA (CONTINUED)

Basin and Precipitation Station[1]	Elevation in Feet	Source of Data[2]	Precipitation						
			During February, 1963			From October 1, 1962, Through February 28, 1963			Average Water Year[3] (Inches)
			Total For Month (Inches)	Average[3] (Inches)	In Percent of Average	Season Total (Inches)	Average[3] (Inches)	In Percent of Average	
SOUTH COASTAL AREA (CONTINUED)									
San Gabriel River (Continued)									
Henninger Flats	2550	LACFCD	6.06	5.46	111	7.66	18.84	41	27.96
San Gabriel Dam Camp	1481	LACFCD	6.20	5.19	119	7.32	19.48	38	28.48
San Dimas Dam	1350	LACFCD	5.45	4.60	118	7.90	15.92	50	23.01
Claremont Pomona College	1201	USWB	4.47	3.67	122	6.01	12.87	47	18.64
Santa Ana River									
Big Pines Camp	6860	LACFCD	2.77	4.88	57	4.47	18.11	25	27.34
Big Bear Lake Dam	6815	USWB	5.87	8.82	67	7.60	29.30	26	44.23
Squirrel Inn #2	5723	USWB	5.21	8.82	59	6.71	29.14	23	43.22
Mill Creek #2	2965	USWB	4.39	3.99	110	6.07	14.08	43	22.66
Santa Ana River PH #1	2765	USWB	5.09	4.83	105	6.78	17.14	40	26.52
Lytle Creek PH	2250	USWB	-	6.69	--	-	23.87	--	34.36
Elsinore	1300	USWB	3.24	2.33	139	3.40	8.17	42	11.35
San Bernardino Co Hospital	1125	USWB	3.12	3.49	89	3.80[E]	12.28	31	17.93
San Diego County									
Cuyamaca	4650	USWB	7.22	7.45	97	8.84	24.88	36	38.84
Julian Wynola	3650	USWB	6.27	5.62	112	8.17	20.02	41	31.25
Warner Springs	3180	USWB	3.56	3.01	118	4.49	11.10	40	17.42
Campo	2612	USWB	3.03	3.38	90	4.17	11.58	36	17.99
Barrett Dam	1623	CSD	3.57	3.76	95	5.32	12.66	42	18.91
El Capitan Dam	600	USWB	3.45	3.43	101	4.74	11.40	42	17.02

TABLE 1 - PRECIPITATION DATA (CONTINUED)

Basin and Precipitation Station[1]	Elevation in Feet	Source of Data[2]	Precipitation						
			During February, 1963			From October 1, 1962, Through February 28, 1963			Average Water Year[3]
			Total For Month (Inches)	Average[3] (Inches)	In Percent of Average	Season Total (Inches)	Average[3] (Inches)	In Percent of Average	(Inches)
CENTRAL VALLEY AREA									
Sacramento Valley Floor									
French Gulch	1100	USWB	6.30	6.07	104	24.14	27.04	89	37.50
Redding FS #2	577	USWB	3.27	6.30	52	24.45	26.47	92	37.45
Ono	980	USWB	-	5.80	--	-	25.39	--	36.01
Volta PH	2200	PG&E	4.31	5.09	85	21.84	21.95	99	32.90
Harrison Gulch RS	2710	USWB	8.29	5.54	150	29.04	25.40	114	34.94
Ferguson Ranch	800	USWB	3.49	4.46	78	16.57	19.52	85	27.69
Mineral	4911	USWB	5.62	7.61	74	48.40	33.59	144	48.91
Red Bluff WB AP	341	USWB	2.28	2.98	77	13.86	13.65	102	19.41
Centerville PH	522	USWB	3.14	7.64	41	34.06	30.85	110	42.99
Paskenta RS	755	USWB	4.48	3.54	127	14.91	15.59	96	21.52
Orland	254	USWB	3.70	3.02	123	14.62	12.86	114	17.83
Chico Experiment Station	205	USWB	2.90	4.38	66	22.04	18.18	121	25.32
Stony Gorge Reservoir	800	USBR	3.36	3.10	108	12.92	12.96	100	17.83
Willows	140	USWB	3.32	2.97	112	13.15	12.48	105	17.00
Oroville Bridge	220	USWB	3.43	4.70	73	23.93	19.44	123	26.95
East Park Reservoir	1205	USBR	4.01	3.22	125	14.71	13.25	111	17.82
Stonyford Cooley Ranch	3015	USWB	13.08	9.08	144	44.02	39.98	110	52.58
Colusa 1SSW	60	USWB	-	2.73	--	-	11.25	--	15.37
Marysville	62	USWB	1.31	3.63	36	17.42	14.77	118	20.32
Lakeport	1343	USWB	3.18	4.73	67	22.74	20.84	109	27.41
Leesville Keegan Ranch	1340	USWB	-	4.14	--	-	12.18	--	22.91
Nicolaus	47	USWB	2.23	3.23	69	18.47	12.89	143	17.82
Dunnigan-Powers Ranch	104	DWR	2.68	2.85	94	17.13	11.53	149	15.56
Cobb	2520	DWR	12.12	10.41	116	56.52	45.84	123	60.30

TABLE 1 - PRECIPITATION DATA (CONTINUED)

Basin and Precipitation Station 1/	Elevation in Feet	Source of Data 2/	Precipitation						
			During February, 1963			From October 1, 1962, Through February 28, 1963			Average Water Year 3/
			Total For Month (Inches)	Average 3/ (Inches)	In Percent of Average	Season Total (Inches)	Average 3/ (Inches)	In Percent of Average	(Inches)
CENTRAL VALLEY AREA (CONTINUED)									
Sacramento Valley Floor (Continued)									
Rocklin	239	USWB	2.90	4.20	69	18.70	16.24	115	22.74
Citrus Heights	138	DWR	1.43	3.94	36	18.30	15.41	119	21.39
Capay 4W	297	DWR	1.80	4.28	42	19.84	16.53	120	21.92
Woodland 1WNW	69	USBR	2.69	2.96	91	16.81	11.97	140	16.16
Sacramento WB City	25	USWB	1.75	3.31	53	14.39	13.12	110	18.05
Davis 1WSW	51	USBR	3.36	3.00	112	19.07	12.11	157	16.37
Winters	135	USBR	3.69	3.37	109	18.81	13.30	141	17.80
Arbuckle 5SSW	360	DWR	2.10	2.84	74	15.17	11.55	131	15.89
San Joaquin Valley Floor									
Camp Pardee	658	USBR	4.50	3.59	125	14.01	14.64	96	20.83
Galt	49	DWR	3.88	2.78	140	12.70	10.91	116	15.27
Wallace	197	USWB	5.03	3.33	151	12.61	13.57	93	19.29
Rio Vista	22	USWB	1.31	2.69	49	11.14	10.95	102	14.93
Lodi	40	USBR	3.52	2.74	128	11.32	11.56	98	16.11
Brentwood	85	DWR	1.61	2.08	77	11.85	8.87	134	11.87
Antioch Fibreboard Mill	46	USWB	2.87	2.23	129	11.30	9.30	122	12.59
Stockton FS #4	11	USWB	5.86	2.33	252	11.76	9.95	118	13.91
Oakdale	155	DWR	4.12	2.35	175	8.96	9.86	91	14.32
Oakdale Woodward Dam	215	USBR	2.82	2.29	123	6.95	9.37	74	13.52
Tracy Carbona	140	USWB	1.82	1.46	125	5.42	6.09	89	8.76
Modesto	91	USBR	2.68	1.99	135	6.99	8.11	86	11.76
Denair	124	USBR	3.46	1.89	183	7.14	8.30	86	12.24
Newman 2NW	108	USBR	3.63	1.66	219	8.60	7.03	122	10.01
Merced FS #2	169	USWB	2.95	2.12	139	7.60	8.23	92	11.91

TABLE 1 - PRECIPITATION DATA (CONTINUED)

BASIN AND PRECIPITATION STATION 1/	ELEVATION IN FEET	SOURCE OF DATA 2/	PRECIPITATION						
			DURING FEBRUARY, 1963			FROM OCTOBER 1, 1962, THROUGH FEBRUARY 28, 1963			AVERAGE WATER YEAR 3/ (INCHES)
			TOTAL FOR MONTH (INCHES)	AVERAGE 3/ (INCHES)	IN PERCENT OF AVERAGE	SEASON TOTAL (INCHES)	AVERAGE 3/ (INCHES)	IN PERCENT OF AVERAGE	
CENTRAL VALLEY AREA (CONTINUED)									
SAN JOAQUIN VALLEY FLOOR (CONTINUED)									
LOS BANOS	125	USWB	3.48	1.43	243	5.90	6.00	98	8.64
SAN JUAN HDQTRS M & L	90	DWR	3.27	1.46	224	5.87	6.14	96	8.84
FRIANT GOVERNMENT CAMP	410	USWB	3.26	2.40	136	7.69	9.36	82	13.41
MADERA	270	USBR	2.34	1.84	127	5.20	6.87	76	10.01
MENDOTA DAM	166	USBR	2.50	1.24	202	5.17	5.11	101	7.44
FRESNO WB AP	331	USWB	2.01	1.61	125	5.41	6.45	84	9.53
ORANGE COVE	431	USBR	3.23	2.42	133	6.92	8.86	78	12.88
PANOCHE	1265	USWB	1.80	1.54	117	5.32	5.83	91	8.46
LEMON COVE	513	USWB	2.15	2.76	78	5.42	9.51	57	14.19
VISALIA	354	USWB	2.13	1.84	116	3.41	6.68	51	9.66
HANFORD	242	USBR	1.68	1.52	111	3.16	5.59	57	8.27
LINDSAY	395	USWB	2.24	2.00	112	4.30	7.46	58	11.03
COALINGA	671	USWB	-	1.42	--	-	4.81	--	7.03
PORTERVILLE	393	USWB	2.42	1.84	132	3.38	7.14	47	10.71
ANGIOLA	205	USWB	1.45	1.35	107	2.17	4.93	44	7.33
WASCO	333	USBR	1.94	1.14	170	2.55	4.04	63	6.33
SOUTH BELRIDGE	575	DWR	1.33	.99	134	1.51	3.54	43	5.16
BAKERSFIELD WB AP	494	USWB	1.54	1.05	147	1.89	3.96	48	6.29
SAN EMIGDIO RANCH	1450	DWR	-	1.51	--	-	5.65	--	8.81
TEHACHAPI	3975	USWB	1.29	1.98	65	1.69	7.15	24	11.17
TEJON RANCHO	1425	USWB	2.41	1.89	128	3.34	7.26	46	11.55
PATTIWAY	3868	USWB	2.29	1.77	129	2.72	6.44	42	9.82

TABLE 1 - PRECIPITATION DATA (CONTINUED)

Basin and Precipitation Station[1]	Elevation in Feet	Source of Data[2]	Precipitation						
			During February, 1963			From October 1, 1962, Through February 28, 1963			Average Water Year[3]
			Total For Month (Inches)	Average[3] (Inches)	In Percent of Average	Season Total (Inches)	Average[3] (Inches)	In Percent of Average	(Inches)
CENTRAL VALLEY AREA (CONTINUED)									
UPPER SACRAMENTO, PIT, AND McCLOUD RIVERS									
JESS VALLEY	5290	USWB	1.71	1.94	88	11.30	9.08	124	16.49
ALTURAS RS	4365	USWB	1.69	1.37	123	10.55	6.72	157	12.16
LOOKOUT	4155	DWR	2.65	1.93	137	17.97	8.97	200	14.67
BIEBER	4130	DWR	2.71	2.21	123	17.47	10.27	170	16.79
MOUNT SHASTA WB CITY	3544	USWB	3.74	5.12	73	24.45	22.74	108	33.53
McCLOUD	3300	USWB	7.32	7.77	94	35.71	33.55	106	48.05
HAT CREEK PH #1	3015	PG&E	2.23	2.96	75	15.16	11.94	127	17.99
DUNSMUIR RS	2420	USWB	10.40	8.29	125	44.29	36.19	122	51.22
PIT RIVER PH #5	1450	PG&E	8.95	12.09	74	55.33	51.85	107	75.37
VOLLMERS	1359	USWB	9.40	10.04	94	43.13	43.72	99	62.70
SHASTA DAM	1076	USBR	6.97	10.69	65	32.33	40.83	79	55.90
FEATHER RIVER									
BUCKS STORAGE RESERVOIR	5100	PG&E	10.89	10.78	101	56.59	46.99	120	68.72
SIERRAVILLE RS	4975	USWB	6.69	4.03	166	30.48	17.03	179	24.22
VINTON	4945	DWR	1.66	1.31	127	13.85	6.72	206	10.63
PORTOLA	4838	USWB	2.13	2.95	72	18.75	12.49	150	18.14
CANYON DAM	4555	USWB	3.55	6.27	57	30.14	25.52	118	36.77
CHESTER	4530	USWB	-	4.78	--	-	20.70	--	30.09
BRUSH CREEK RS	3560	USWB	8.05	12.34	65	57.39	49.73	116	68.93
QUINCY RS	3409	USWB	5.29	6.24	85	33.06	26.65	124	39.05
CARIBOU	2990	PG&E	3.99	6.26	64	32.54	26.94	121	39.17
LAKE WILENOR	2000	DWR	3.44	9.15	38	27.79	36.32	77	51.34

TABLE 1 - PRECIPITATION DATA (CONTINUED)

BASIN AND PRECIPITATION STATION 1/	ELEVATION IN FEET	SOURCE OF DATA 2/	PRECIPITATION						
			DURING FEBRUARY, 1963			FROM OCTOBER 1, 1962, THROUGH FEBRUARY 28, 1963			AVERAGE WATER YEAR 3/ (INCHES)
			TOTAL FOR MONTH (INCHES)	AVERAGE 3/ (INCHES)	IN PERCENT OF AVERAGE	SEASON TOTAL (INCHES)	AVERAGE 3/ (INCHES)	IN PERCENT OF AVERAGE	
CENTRAL VALLEY AREA (CONTINUED)									
FEATHER RIVER (CONTINUED)									
BUCKS CREEK PH (STORRIE)	1760	PG&E	8.60	9.88	87	45.34	42.58	106	62.32
LAS PLUMAS	506	USWB	3.50	8.70	40	43.95	35.07	125	48.62
YUBA RIVER									
SNOW LAB-CENTRAL SIERRA	6885	USWB	8.96	8.23	109	42.99	35.02	123	51.18
BOWMAN DAM	5347	USWB	8.81	10.51	84	56.98	43.44	131	63.72
BLUE CANYON WB AP	5280	USWB	5.29	9.71	54	48.26	41.01	118	58.94
LAKE SPAULDING	5156	USWB	8.48	10.52	81	55.06	43.72	126	64.27
DEER CREEK PH	3700	USWB	9.03	11.69	77	57.29	46.96	122	66.93
DOWNIEVILLE RS	2895	USWB	12.67	10.22	124	53.86	42.14	128	60.84
CAMPTONVILLE RS	2745	USWB	9.59	10.28	93	40.63	42.83	95	60.42
GRASS VALLEY	2693	USWB	-	9.33	--	-	37.38	--	53.25
NEVADA CITY	2600	USWB	6.81	8.59	79	43.24	34.67	125	49.65
BULLARDS BAR PH	1640	USWB	8.55	11.78	73	54.15	47.83	113	67.30
DOBBINS COLGATE FOREBAY	1550	USWB	2.60	6.86	38	34.04	28.87	118	40.87
COLGATE PH	585	PG&E	2.31	6.95	33	30.91	28.21	110	40.05
NORTH SAN JUAN	2081	DWR	3.18	8.03	40	37.55	32.41	116	46.41
AMERICAN RIVER									
TWIN LAKES	7829	PG&E	6.86	7.81	88	32.06	31.29	102	47.59
BIG BEND RS	5739	USWB	14.46	10.70	135	59.59	44.36	134	64.51
BLUE CANYON WB AP	5280	USWB	5.29	9.71	54	48.26	41.01	118	58.94
DRUM FOREBAY	4563	PG&E	8.89	10.06	88	40.72	41.09	99	59.48
SLY PARK	3480	USBR	10.40	7.98	130	34.17	31.35	109	44.99

TABLE 1 - PRECIPITATION DATA (CONTINUED)

Basin and Precipitation Station 1/	Elevation in Feet	Source of Data 2/	Precipitation						
			During February, 1963			From October 1, 1962, Through February 28, 1963			Average Water Year 3/ (Inches)
			Total For Month (Inches)	Average 3/ (Inches)	In Percent of Average	Season Total (Inches)	Average 3/ (Inches)	In Percent of Average	
CENTRAL VALLEY AREA (CONTINUED)									
American River (Continued)									
Pacific House	3440	USWB	10.63	9.08	117	35.26	35.58	99	51.00
Georgetown RS	3001	USWB	9.22	9.57	96	42.43	37.69	112	54.00
Colfax	2418	USWB	4.28	8.05	53	40.94	31.84	129	45.59
Placerville	1890	USWB	6.06	6.96	87	27.10	27.26	99	39.07
Auburn	1297	USWB	4.82	6.30	76	28.54	24.73	115	34.82
Folsom Dam	350	USBR	3.32	4.34	76	18.86	16.94	111	23.63
Mokelumne River									
Twin Lakes	7829	PG&E	6.86	7.81	88	32.06	31.29	102	47.59
Salt Spring PH	3700	PG&E	7.60	7.53	101	27.76	29.71	93	43.69
West Point 3SW	2400	USWB	5.73	6.43	89	24.07	25.15	96	36.67
Tiger Creek PH	2355	PG&E	7.82	7.85	100	29.74	31.05	96	45.11
Fiddletown Lynch Ranch	2100	USWB	6.90	6.11	113	27.76	23.88	116	33.93
Electra PH	715	PG&E	4.35	5.38	81	18.51	20.95	88	30.33
Stanislaus River									
Strawberry Lake	5620	PG&E	6.28	7.56	83	25.15	30.17	83	44.73
Spring Gap Forebay	4875	PG&E	4.28	7.43	58	24.19	28.92	84	41.87
Calaveras Big Trees	4696	USWB	8.10	9.47	86	32.01	36.77	87	53.36
Tuolumne River									
Strawberry Lake	5620	PG&E	6.28	7.56	83	25.15	30.17	83	44.73
Lake Eleanor	4662	USWB	3.60	7.40	49	21.83	28.91	76	42.54
Hetch Hetchy	3870	USWB	7.94	5.55	143	19.35	22.80	85	34.91
Sonora	1830	USWB	7.75	5.56	139	18.58	21.52	86	31.31

TABLE 1 - PRECIPITATION DATA (CONTINUED)

Basin and Precipitation Station 1/	Elevation in Feet	Source of Data 2/	Precipitation						
			During February, 1963			From October 1, 1962, Through February 28, 1963			Average Water Year 3/ (Inches)
			Total For Month (Inches)	Average 3/ (Inches)	In Percent of Average	Season Total (Inches)	Average 3/ (Inches)	In Percent of Average	
CENTRAL VALLEY AREA (CONTINUED)									
Merced River									
Yosemite NP	3985	USWB	6.50	6.04	108	20.22	24.51	83	35.92
Dudleys	3000	USWB	6.36	7.30	87	22.82	26.69	86	38.05
Mariposa	2011	USWB	9.05	5.56	163	23.23	20.76	112	29.33
Exchequer Reservoir	484	USWB	3.58	3.93	91	10.20	14.68	69	20.75
Upper San Joaquin River									
Florence Lake	7355	SCEC	5.95	4.22	141	17.20	15.55	111	24.14
Huntington Lake	7020	USWB	6.92	5.42	128	19.13	20.72	92	31.13
Crane Valley	3500	PG&E	8.82	7.43	119	26.27	27.99	94	40.45
North Fork RS	2630	USWB	8.39	6.05	139	20.16	22.87	88	33.08
Auberry	2003	USWB	4.68	4.47	105	16.09	16.80	96	24.50
Kings River									
Grant Grove	6580	USWB	10.11	7.49	135	22.12	29.20	76	43.12
Balch PH	1750	USWB	5.82	4.98	117	18.46	18.68	99	27.32
Piedra	580	USWB	3.99	3.10	105	8.54	11.50	74	16.65
Kaweah River									
Grant Grove	6580	USWB	10.11	7.49	135	22.12	29.20	76	43.12
Giant Forest	6360	USWB	12.73	8.08	158	26.20	29.26	90	43.67
Ash Mountain	1698	USWB	7.33	4.73	155	14.77	17.23	86	26.19
Three Rivers Edison PH #2	950	USWB	3.70	3.77	98	11.96	13.86	86	20.70
Tule River									
Springville Tule Headworks	4070	USWB	8.00	6.56	122	-	24.54	--	36.98
Tule River Intake	2450	SCEC	5.31	5.56	96	15.55	20.43	76	30.51

TABLE 1 - PRECIPITATION DATA (CONTINUED)

Basin and Precipitation Station 1/	Elevation in Feet	Source of Data 2/	Precipitation						
			During February, 1963			From October 1, 1962, Through February 28, 1963			Average Water Year 3/ (Inches)
			Total For Month (Inches)	Average 3/ (Inches)	In Percent of Average	Season Total (Inches)	Average 3/ (Inches)	In Percent of Average	
CENTRAL VALLEY AREA (CONTINUED)									
Kern River									
Kern River Intake #3	3650	USWB	4.09	3.37	121	13.52	12.06	112	16.88
Glennville	3130	USWB	3.22	3.51	92	4.32	13.28	33	20.94
Kern River PH #3	2703	USWB	2.39	2.46	97	8.04	9.07	89	12.54
Wofford Heights	2700	USWB	1.99	2.00	100	4.92	7.35	67	10.14
LAHONTAN AREA									
Surprise Valley									
Cedarville	4672	USWB	1.94	1.43	136	11.70	7.18	163	12.12
Fort Bidwell	4498	USWB	1.81	1.87	97	11.51	8.85	130	14.47
Madeline Plain-Honey Lake									
Ravendale Jim Marr Ranch	5540	DWR	-	1.77	--	-	7.80	--	11.32
Susanville Courthouse	4325	DWR	.80	2.39	33	12.86	10.56	122	15.31
Doyle	4240	USWB	1.16	1.48	78	13.25	6.33	209	9.44
Susanville AP	4148	USWB	-	1.67	--	-	7.44	--	10.96
Wendel 1E	4040	DWR	.51	.94	54	6.99	4.20	166	6.20
Truckee and Tahoe Basin									
Tahoe	6228	USWB	7.62	5.20	146	27.63	21.60	128	30.65
Truckee RS	5960	USWB	6.93	5.24	132	24.10	21.76	111	30.87
Carson River									
Woodfords	5671	USWB	2.88	3.15	91	11.69	13.30	89	21.17
Minden, Nevada	4700	USWB	.29	1.34	25	-	5.83	--	8.84
Walker River									
Bridgeport	6470	USWB	1.68	1.52	111	6.95	6.36	109	9.68
Smith, Nevada	4750	USWB	-	-	--	-	-	--	7.16

TABLE 1 - PRECIPITATION DATA (CONTINUED)

Basin and Precipitation Station 1/	Elevation in Feet	Source of Data 2/	Precipitation						
			During February, 1963			From October 1, 1962, Through February 28, 1963			Average Water Year 3/ (Inches)
			Total For Month (Inches)	Average 3/ (Inches)	In Percent of Average	Season Total (Inches)	Average 3/ (Inches)	In Percent of Average	
LAHONTAN AREA (CONTINUED)									
Mono Basin									
Ellery Lake	9600	USWB	2.61	3.21	81	14.43	12.58	115	19.45
Gem Lake	8970	USWB	1.20	2.76	44	8.99	10.80	83	16.69
Mono Lake	6520	USWB	2.97	2.60	114	12.46	10.08	124	14.42
Owens River									
White Mountain #2	12470	USWB	-	1.63	--	-	7.51	--	14.71
South Lake	9500	CEPC	2.30	2.97	77	12.03	11.25	107	17.63
Lake Sabrina	9065	CEPC	1.80	3.00	60	9.93	11.35	82	17.79
Crooked Creek	6700	LADWP	4.28	1.64	262	11.83	6.79	174	10.07
Big Pines PH #3	5200	LADWP	4.12	1.51	272	7.57	6.34	119	8.88
Bishop WB AP	4108	USWB	.63	1.10	57	3.85	4.44	87	6.30
Independence	3950	USWB	3.90	.77	501	9.36	3.40	275	4.76
LA Aqueduct at Intake	3830	LADWP	6.23	.81	769	7.24	3.45	210	4.74
Haiwee	3810	USWB	2.78	.97	287	3.84	4.06	95	5.97
Cottonwood Gates	3600	LADWP	3.40	1.01	337	8.25	3.98	207	5.51
Death Valley Area									
Death Valley	-194	USWB	.65	.24	271	.87	.96	91	1.72
Mojave Desert Area									
Fairmont	3060	USWB	3.38	3.02	112	3.48	10.54	33	14.78
Palmdale FAA AP	2517	USWB	.84	1.15	73	.84	4.02	21	5.65
Inyokern	2440	USWB	.73	.73	100	.90	2.57	35	4.19
Daggett FAA AP	1922	USWB	.09	.60	15	.29	2.45	12	3.81
Baker 9NNW	1045	USWB	.88	.46	191	1.35	1.81	75	3.28

TABLE 1 - PRECIPITATION DATA (CONTINUED)

Basin and Precipitation Station 1/	Elevation in Feet	Source of Data 2/	Precipitation							
			During February, 1963			From October 1, 1962, Through February 28, 1963			Average Water Year 3/ (Inches)
			Total For Month (Inches)	Average 3/ (Inches)	In Percent of Average	Season Total (Inches)	Average 3/ (Inches)	In Percent of Average	
COLORADO DESERT AREA									
Twentynine Palms	1975	USWB	.10	.73	14	1.86	2.98	62	4.64
Iron Mountain	922	USWB	.21	.35	60	2.02	1.64	123	3.29
Needles FAA AP	913	USWB	-	.54	--	-	2.50	--	5.00
Blythe FAA AP	390	USWB	.25	.38	66	1.40	1.98	71	3.84
Yuma, Arizona, WB AP	199	USWB	.13	.20	65	1.09	1.17	93	2.41
Imperial	-64	USWB	.14	.41	34	.98	1.80	54	3.14
Thermal FAA AP	-120	USWB	.55	.36	153	1.18	1.79	66	2.90

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

2/ USWB - United States Weather Bureau; LACFCD - Los Angeles County Flood Control District; DWR - State of California, Department of Water Resources; PG&E - Pacific Gas and Electric Company; SCEC - Southern California Edison Company; LADWP - Los Angeles Department of Water and Power; MMWD - Marin Municipal Water District; CSJ - City of San Jose; USBR - United States Bureau of Reclamation; CEPC - California Electric Power Company; CSD - City of San Diego.

3/ Based upon the 50-year period 1905-06 through 1954-55. When the period of record is less than 50 years, the average has been computed by comparison with stations having complete records. Averages are therefore based upon the same period and are comparable. All records have been checked for homogeneity, and adjusted to most recent location and exposure.

TABLE 2

SNOW SURVEY DATA

Area, Drainage Basin, and Snow Course[1]	Elevation in Feet	Date of Survey	Depth in Inches	Density in Percent	Water Content			
					In Inches	In Percent of April 1. Average	April 1 Average in Inches[2]	One Year Ago in Inches
NORTH COASTAL AREA								
Scott River								
Middle Boulder No. 1	6600	2-26-63	3.0	37	1.1	3	32.9	NSM
Middle Boulder No. 3	6200	2-26-63	0	--	0	0	28.8	NSM
Dynamite Meadow	5700	2-26-63	0	--	0	New Course - 1955		NSM
Swampy John	5500	3- 4-63	1.0	30	0.3	1	38.3	37.2
Trinity River								
Big Flat	5100	2-26-63	0	--	0	0	15.7	17.7
Eel River								
Anthony Peak	6200	2-27-63	0	--	0	0	29.3	29.9
SOUTH COASTAL AREA								
Piru Creek								
Mount Pinos	8600	No survey made						24.5
Santa Ana River								
Christmas Tree	8500	2-13-63	18.3	51	3.6	New Course - 1962		23.4
San Yca	7500	No survey made						7.5
Cottonwood Creek								
Little Laguna Meadow	5500	No survey made						7.6
CENTRAL VALLEY AREA								
Sacramento River								
Mount Shasta	7900	2-28-63	49.5	44	21.8	44	49.4	41.0
Sand Flat	6800	2-28-63	22.8	40	9.2	22	41.2	45.9

TABLE 2 - SNOW SURVEY DATA (CONTINUED)

AREA, DRAINAGE BASIN, AND SNOW COURSE[1]	ELEVATION IN FEET	DATE OF SURVEY	DEPTH IN INCHES	DENSITY IN PERCENT	WATER CONTENT			
					IN INCHES	IN PERCENT OF APRIL 1. AVERAGE	APRIL 1 AVERAGE IN INCHES[2]	ONE YEAR AGO IN INCHES
CENTRAL VALLEY AREA (CONTINUED)								
McCLOUD RIVER								
MT. SHASTA	7900	2-28-63	49.5	44	21.8	44	49.4	41.0
STOUTS MEADOW	5400	2-26-63	0	--	0	0	40.9	55.5
PIT RIVER								
UPPER LASSEN PEAK	8480	2-25-63	69.5	48	33.3	42	79.0	61.3
LOWER LASSEN PEAK	8240	2-25-63	71.0	51	36.3	46	78.1	67.3
CEDAR PASS	7100	3- 4-63	7.1	19	1.4	8	17.0	13.4
THOUSAND LAKES	6500	NO SURVEY MADE					38.0	36.4
ADIN MOUNTAINS	6350	3- 2-63	PATCHES				14.0	10.8
NEW MANZANITA LAKE	5900	2-26-63	0	--	0	0	6.7	13.2
FEATHER RIVER								
UPPER LASSEN PEAK	8480	2-25-63	69.5	48	33.3	42	79.0	61.3
LOWER LASSEN PEAK	8240	2-25-63	71.0	51	36.3	46	78.1	67.3
MOUNT DYER No. 1	7080	2-27-63	PATCHES				24.2	33.6
EUREKA BOWL	6800	3- 1-63	0	--	0	0	41.9	51.6
YUBA PASS	6700	3- 4-63	4	25	1	3	31.8	31.4
ROWLAND CREEK	6700	3- 1-63	0	--	0	0	18.1	NSM
HARKNESS FLAT	6200	2-26-63	4.8	38	1.8	6	28.4	30.1
EUREKA LAKE	6200	3- 1-63	0	--	0	0	32.3	42.3
MOUNT DYER No. 2	6040	2-27-63	0	--	0	0	16.6	23.4
FRENCHMAN COVE	5800	3- 1-63	0	--	0	NEW COURSE - 1963		--
FREDONYER PASS No. 1	5750	2-28-63	0	--	0	0	9.7	17.2
ABBEY	5700	3- 1-63	0	--	0	NEW COURSE - 1963		--
ANTELOPE RIDGE	5650	3- 1-63	0	--	0	NEW COURSE - 1963		--
LETTERBOX	5600	2-25-63	0	--	0	0	46.9	89.1
MOUNT STOVER	5600	2-27-63	0	--	0	0	16.6	26.6

TABLE 2 - SNOW SURVEY DATA (CONTINUED)

AREA, DRAINAGE BASIN, AND SNOW COURSE[1]	ELEVATION IN FEET	DATE OF SURVEY	DEPTH IN INCHES	DENSITY IN PERCENT	WATER CONTENT			
					IN INCHES	IN PERCENT OF APRIL 1. AVERAGE	APRIL 1 AVERAGE IN INCHES[2]	ONE YEAR AGO IN INCHES
CENTRAL VALLEY AREA (CONTINUED)								
FEATHER RIVER (CONTINUED)								
BROWNS CAMP	5400	2-25-63	0	--	0	0	22.1	32.4
FEATHER RIVER MEADOWS	5400	2-26-63	0	--	0	0	22.8	27.4
HASKINS FLAT	5200	2-25-63	0	--	0	0	29.8	36.7
WARNER CREEK	5080	2-26-63	0	--	0	0	16.1	20.0
HUMBUG SUMMIT	4840	2-28-63	0	--	0	0	12.4	23.2
CHESTER FLAT	4530	2-27-63	0	--	0	0	7.3	20.1
STONY CREEK								
ANTHONY PEAK	6200	2-27-63	0	--	0	0	29.3	29.9
YUBA RIVER								
CASTLE CREEK No. 5	7400	2-28-63	23.4	45	10.4	19	55.9	45.2
ENGLISH MOUNTAIN	7100	2-28-63	0	--	0	0	41.7	50.0
DONNER SUMMIT	6900	3- 1-63	0	--	0	0	39.6	41.4
YUBA PASS	6700	3- 4-63	4.0	25	1.0	3	31.8	31.4
FURNACE FLAT	6700	3- 1-63	0	--	0	0	45.1	41.6
FINDLEY PEAK	6450	NO SURVEY MADE					27.6	NSM
LAKE FORDYCE	6400	3- 1-63	0	--	0	0	38.8	40.2
JACKSON MEADOWS	5950	2-28-63	0	--	0	0	29.1	38.4
GIBSONVILLE	5350	3- 1-63	0	--	0	0	34.4	49.8
AMERICAN RIVER								
UPPER CARSON PASS	8550	2-26-63	34.3	38	12.9	37	35.2	33.8
EMIGRANT VALLEY	8400	2-26-63	35.9	41	14.7	33	44.1	40.4
LOWER CARSON PASS	8400	2-26-63	32.9	38	12.4	33	37.9	35.4
TWIN LAKES	8000	2-25-63	12.9	44	5.7	19	30.5	30.0
TRAGEDY SPRINGS	7900	2-26-63	16.7	50	8.6	19	44.5	38.7

TABLE 2 - SNOW SURVEY DATA (CONTINUED)

AREA, DRAINAGE BASIN, AND SNOW COURSE[1]	ELEVATION IN FEET	DATE OF SURVEY	DEPTH IN INCHES	DENSITY IN PERCENT	WATER CONTENT			
					IN INCHES	IN PERCENT OF APRIL 1. AVERAGE	APRIL 1 AVERAGE IN INCHES[2]	ONE YEAR AGO IN INCHES
CENTRAL VALLEY AREA (CONTINUED)								
AMERICAN RIVER (CONTINUED)								
LOST CORNER MOUNTAIN	7550	2-28-63	0	--	0	NEW COURSE - 1959		41.5
ECHO SUMMIT	7450	2-28-63	13.0	41	5.4	14	38.9	35.3
CORRAL FLAT	7200	2-26-63	PATCHES				39.7	36.8
SILVER LAKE	7100	2-26-63	0	--	0	0	24.1	26.3
PHILLIPS	6900	3- 1-63	0	--	0	0	29.8	32.0
WRIGHTS LAKE	6900	2-28-63	PATCHES			NEW COURSE - 1956		36.0
LYONS CREEK	6700	2-28-63	PATCHES				32.0	39.3
HUYSINK	6600	2-28-63	6.8	39	2.6	6	46.7	42.3
TAMARACK FLAT	6550	3- 1-63	0	--	0	0	29.2	28.9
SOUTH LOON LAKE	6400	2-28-63	0	--	0	0	28.3	40.9
ONION CREEK	6100	2-28-63	0	--	0	0	23.3	29.8
STRAWBERRY	5700	3- 1-63	0	--	0	0	9.7	14.4
ROBBS VALLEY (ORELLI)	5600	2-28-63	0	--	0	0	23.6	33.2
ICE HOUSE	5300	3- 4-63	0	--	0	0	13.2	15.4
MOKELUMNE RIVER								
TRAGEDY SPRINGS	7900	2-26-63	16.7	50	8.6	19	44.5	38.7
CORRAL FLAT	7200	2-26-63	PATCHES				39.7	36.8
SILVER LAKE	7100	2-26-63	0	--	0	0	24.1	26.3
BEAR VALLEY RIDGE No. 1	6700	3- 4-63	0	--	0	0	26.3	22.1
BEAR VALLEY RIDGE No. 2	6600	3- 4-63	0	--	0	0	28.2	30.9
LUMBERYARD	6500	2-27-63	0	--	0	0	32.4	40.5
HAMS STATION	5450	2-26-63	0	--	0	0	9.8	18.2
ANTELOPE SPRINGS	4350	2-26-63	0	--	0	0	3.5	8.3

TABLE 2 - SNOW SURVEY DATA (CONTINUED)

AREA, DRAINAGE BASIN, AND SNOW COURSE[1]	ELEVATION IN FEET	DATE OF SURVEY	DEPTH IN INCHES	DENSITY IN PERCENT	WATER CONTENT			
					IN INCHES	IN PERCENT OF APRIL 1. AVERAGE	APRIL 1 AVERAGE IN INCHES[2]	ONE YEAR AGO IN INCHES
CENTRAL VALLEY AREA (CONTINUED)								
STANISLAUS RIVER								
DEADMAN CREEK	9250	2-28-63	45.0	38	17.3	NEW COURSE - 1960		31.7
CLARK FORK MEADOW	8900	2-28-63	47.7	38	18.2	NEW COURSE - 1960		33.0
SONORA PASS	8800	2-25-63	32.0	41	13.2	54	24.4	25.3
LOWER RELIEF VALLEY	8100	2-28-63	21.9	43	9.4	23	40.0	39.5
SODA CREEK FLAT	7800	2-28-63	3.8	47	1.8	8	22.6	23.9
EAGLE MEADOW	7500	2-28-63	PATCHES				25.0	28.0
LAKE ALPINE	7500	3- 1-63	19.7	55	10.8	26	41.7	44.6
HERRING CREEK	7400	2-28-63	0	--	0	0	29.3	31.2
RELIEF DAM	7100	2-28-63	0	--	0	0	20.6	23.6
NIAGARA FLAT	6500	2-28-63	0	--	0	0	21.7	23.5
BIG MEADOW	6500	2-28-63	0	--	0	0	29.4	36.4
COTTAGE SPRING	5700	2-28-63	0	--	0	0	15.1	22.2
DORRINGTON	4800	2-28-63	0	--	0	0	6.4	9.5
TUOLUMNE RIVER								
DANA MEADOWS	9850	2-26-63	53.7	33	17.8	59	30.2	NSM
TIOGA PASS	9800	2-26-63	52.1	38	19.6	74	26.3	NSM
RAFFERTY MEADOWS	9400	2-26-63	51.0	48	24.4	79	31.0	NSM
BOND PASS	9300	2-27-63	52.6	41	21.3	48	44.1	41.2
GRACE MEADOW	8900	2-27-63	35.6	53	19.0	49	38.9	44.7
SNOW FLAT	8700	2-25-63	41.5	48	20.0[3]	47	42.8	43.4
TUOLUMNE MEADOW	8600	2-26-63	21.8	48	10.4	48	22.8	NSM
HORSE MEADOW	8400	2-28-63	34.5	49	16.9	36	46.5	44.6
WILMER LAKE	8000	2-27-63	39.2	40	15.8	36	43.8	46.2
SACHSE SPRINGS	7900	3- 2-63	8.7	51	4.4	11	39.5	51.9

TABLE 2 - SNOW SURVEY DATA (CONTINUED)

AREA, DRAINAGE BASIN, AND SNOW COURSE[1]	ELEVATION IN FEET	DATE OF SURVEY	DEPTH IN INCHES	DENSITY IN PERCENT	WATER CONTENT			
					IN INCHES	IN PERCENT OF APRIL 1. AVERAGE	APRIL 1 AVERAGE IN INCHES[2]	ONE YEAR AGO IN INCHES
CENTRAL VALLEY AREA (CONTINUED)								
TUOLUMNE RIVER (CONTINUED)								
SPOTTED FAWN	7800	3- 1-63	26.5	46	12.1	26	47.2	55.0
HUCKLEBERRY LAKE	7800	3- 1-63	27.8	46	12.8	30	43.2	51.5
PARADISE	7700	2-28-63	3.1	37	1.2	3	41.4	39.7
GIN FLAT	7000	2-27-63	PATCHES				35.3	46.1
UPPER KIBBIE RIDGE	6700	3- 2-63	0	--	0	0	21.2	35.3
VERNON LAKE	6700	3- 1-63	0	--	0	0	26.0	28.1
LOWER KIBBIE RIDGE	6700	3- 2-63	0	--	0	0	27.8	43.1
BEEHIVE MEADOW	6500	3- 1-63	0	--	0	0	27.8	31.4
MERCED RIVER								
SNOW FLAT	8700	2-25-63	41.5	48	20.0[3]	47	42.8	43.4
OSTRANDER LAKE	8200	3- 4-63	29.0	43	12.6	37	34.1	39.0
LAKE TENAYA	8150	2-27-63	22.6	53	12.0	35	34.5	NSM
PEREGOY MEADOWS	7100	2-28-63	17.0	29	4.9	15	32.9	38.0
GIN FLAT	7000	2-27-63	PATCHES				35.3	46.1
SAN JOAQUIN RIVER								
MONO PASS	11450	2-26-63	55.7	40	20.2	68	32.5	NSM
PIUTE PASS	11300	2-22-63	61.1	37	22.9	67	34.4	37.8
EMERALD LAKE	10600	2-26-63	55.2	37	20.5	58	35.1	40.4
PIONEER BASIN	10400	2-26-63	61.0	35	21.3[3]	58	36.6	NSM
HEART LAKE	10100	2-26-63	47.5	35	16.8[3]	60	28.0	31.9
VOLCANIC KNOB	10100	2-26-63	56.4	36	20.1	63	31.5	30.6
ROSE MARIE	10000	2-26-63	37.0	65	24.3[3]	83	29.3	34.8
COLBY MEADOW	9800	2-26-63	33.8	63	21.3[3]	94	22.6	26.8

TABLE 2 - SNOW SURVEY DATA (CONTINUED)

Area, Drainage Basin, and Snow Course[1]	Elevation in Feet	Date of Survey	Depth in Inches	Density in Percent	Water Content			
					In Inches	In Percent of April 1. Average	April 1 Average in Inches[2]	One Year Ago in Inches
CENTRAL VALLEY AREA (CONTINUED)								
SAN JOAQUIN RIVER (CONTINUED)								
MAMMOTH PASS	9500	2-27-63	52.6	40	20.8	49	42.3	53.5
AGNEW PASS	9450	2-24-63	43.7	39	17.2	55	31.4	33.1
KAISER PASS	9200	2-28-63	54.0	45	24.4[3]	64	38.2	41.5
DUTCH LAKE	9100	2-27-63	39.0	35	13.5[3]	48	28.3	35.7
COYOTE LAKE	8800	2-26-63	32.6	40	13.2[3]	41	32.2	36.1
CORA LAKES	8400	2-28-63	26.4	55	14.5[3]	39	37.5	NSM
BADGER FLAT	8300	2-28-63	28.7	40	11.5[3]	NEW COURSE - 1960		NSM
NELLIE LAKE	8000	2-28-63	29.5	42	12.5	31	39.9	NSM
LAKE THOMAS A. EDISON	7800	2-26-63	20.3	37	7.6	NEW COURSE - 1958		23.0
CHILKOOT LAKE	7450	2-26-63	14.8	43	6.4	17	37.6	46.0
TAMARACK CREEK	7250	2-27-63	2.2	64	1.4	NEW COURSE - 1960		NSM
CHILKOOT MEADOW	7200	2-26-63	5.8	38	2.2	6	36.9	48.2
FLORENCE LAKE	7200	2-26-63	0	--	0	0	7.9	15.9
HUNTINGTON LAKE	7000	2-26-63	0	--	0	0	21.0	27.9
POISON MEADOW	6800	2-26-63	0.5	40	0.2	1	26.3	40.6
KINGS RIVER								
BISHOP PASS	11200	2-27-63	52.0	40	20.8	69	30.1	NSM
BLACKCAP BASIN	10300	2-28-63	46.6	46	21.6	62	34.8	39.0
BULLFROG LAKE	10650	2-28-63	52.6	37	19.3	67	28.7	NSM
CHARLOTTE RIDGE	10720	2-28-63	55.0	35	19.4	NEW COURSE - 1955		NSM
UPPER BURNT CORRAL MEADOW	9700	2-28-63	51.0	41	21.0	60	34.9	41.0

TABLE 2 - SNOW SURVEY DATA (CONTINUED)

AREA, DRAINAGE BASIN, AND SNOW COURSE[1]	ELEVATION IN FEET	DATE OF SURVEY	DEPTH IN INCHES	DENSITY IN PERCENT	WATER CONTENT			
					IN INCHES	IN PERCENT OF APRIL 1. AVERAGE	APRIL 1 AVERAGE IN INCHES[2]	ONE YEAR AGO IN INCHES
CENTRAL VALLEY AREA (CONTINUED)								
KINGS RIVER (CONTINUED)								
VIDETTE MEADOW	9500	3- 1-63	37.8	51	19.1	NEW COURSE - 1956		NSM
ROWELL MEADOW	8850	2-28-63	17.7	64	11.4	42	27.0	36.3
JUNCTION MEADOW	8250	3- 1-63	27.8	39	10.9	61	17.8	NSM
LONG MEADOW	8500	NO SURVEY MADE					29.7	37.0
POST CORRAL MEADOW	8200	2-28-63	24.4	52	12.8	48	26.5	NSM
DODSONS MEADOW	8050	2-28-63	19.1	62	11.8	NEW COURSE - 1956		37.0
BIG MEADOWS	7600	2-28-63	2.8	75	2.1[3]	8	26.5	33.6
HORSE CORRAL MEADOW	7600	2-28-63	0	--	0	0	18.0	22.6
GRANT GROVE	6600	2-28-63	0	--	0	0	15.3	28.5
KAWEAH RIVER								
FAREWELL GAP	9000	2-28-63	43.2	43	18.8	59	32.1	36.3
PANTHER MEADOW	8500	2-26-63	30.7	41	12.7	34	37.4	47.1
HOCKETT MEADOWS	8500	3- 2-63	20.0	50	10.0[3]	33	30.8	31.6
MINERAL KING	7950	2-27-63	9.3	39	3.6	17	21.5	25.1
GIANT FOREST	6400	2-26-63	0	--	0	0	17.4	25.4
TULE RIVER								
QUAKING ASPEN	7000	3- 1-63	PATCHES				14.7	21.7
OLD ENTERPRISE MILL	6600	2-28-63	0	--	0	0	18.2	20.8
DEER CREEK								
DEAD HORSE MEADOW	7300	3- 1-63	0	--	0	0	14.5	18.5
KERN RIVER								
BIGHORN PLATEAU	11300	3- 7-63	45.9	37	17.9	74	24.2	NSM
COTTONWOOD PASS	11050	3- 4-63	38.4	36	14.0	102	13.7	22.3
CRABTREE MEADOW	11000	3- 6-63	41.6	37	15.2	78	19.4	NSM

TABLE 2 - SNOW SURVEY DATA (CONTINUED)

Area, Drainage Basin, and Snow Course[1]	Elevation in Feet	Date of Survey	Depth in Inches	Density in Percent	Water Content			
					In Inches	In Percent of April 1. Average	April 1 Average in Inches[2]	One Year Ago in Inches
CENTRAL VALLEY AREA (CONTINUED)								
Kern River (Continued)								
Siberian Pass	10880	3- 5-63	41.8	39	16.1	83	19.5	26.5
Guyot Flat	10650	3- 6-63	44.2	36	16.0	77	20.8	NSM
Tyndall Creek	10650	3- 7-63	42.3	36	15.3	80	19.2	NSM
Sandy Meadows	10650	3- 7-63	40.2	37	15.1	77	19.6	NSM
Big Whitney Meadow	9750	3- 4-63	33.2	36	11.8	69	17.2	26.1
Rock Creek	9600	3- 5-63	35.5	39	13.9	77	18.1	27.7
Round Meadow	9000	2-28-63	15.2	49	7.5	30	26.3	32.0
Ramshaw Meadows	8800	No survey made					12.0	NSM
Little Whitney Meadow	8500	No survey made					14.5	NSM
Casa Vieja Meadows	8320	3- 4-63	19.6	45	8.8	44	19.8	28.4
Bonita Meadows	8300	3- 4-63	Patches				14.6	23.4
Monache Meadows	8000	3- 2-63	Patches				8.7	17.8
Quinn Ranger Station	8000	3- 3-63	12.0	50	6.5[3]	30	21.4	NSM
Beach Meadows	7650	3- 2-63	0	--	0	0	10.1	18.3
LAHONTAN AREA								
Surprise Valley								
Cedar Pass	7100	3- 4-63	7.1	19	1.4	8	17.0	13.4
Barber Creek	6500	3- 1-63	0	--	0	New Course - 1958		11.9
Hays Canyon	6400	3- 1-63	0	--	0	New Course - 1958		4.5
Reservation Creek	5900	3- 1-63	0	--	0	New Course - 1958		11.4
49 Mountain	6000	3- 1-63	0	--	0	New Course - 1958		4.1

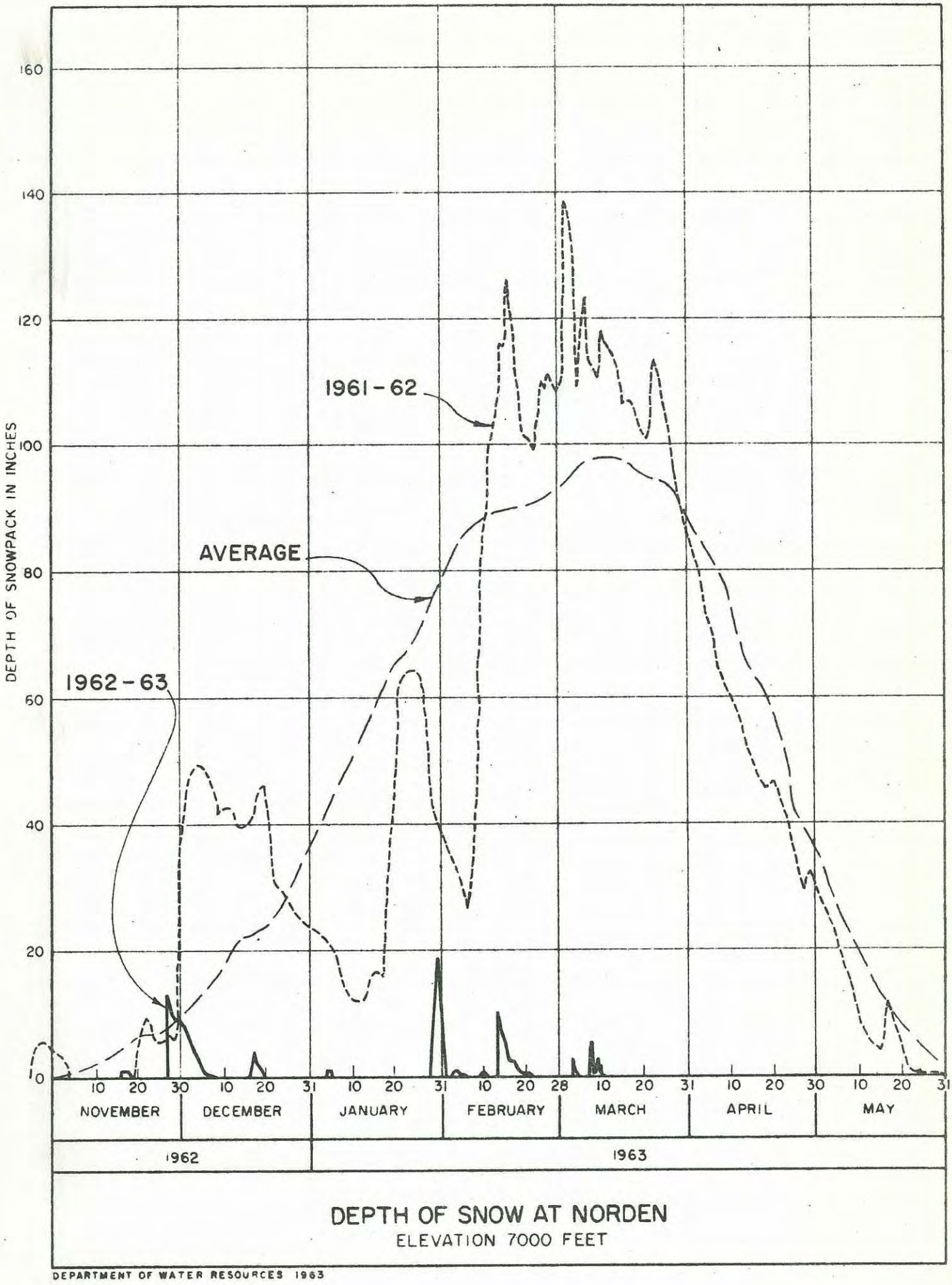
TABLE 2 - SNOW SURVEY DATA (CONTINUED)

AREA, DRAINAGE BASIN, AND SNOW COURSE[1]	ELEVATION IN FEET	DATE OF SURVEY	DEPTH IN INCHES	DENSITY IN PERCENT	WATER CONTENT			
					IN INCHES	IN PERCENT OF APRIL 1. AVERAGE	APRIL 1 AVERAGE IN INCHES[2]	ONE YEAR AGO IN INCHES
LAHONTAN AREA (CONTINUED)								
SUSAN RIVER								
FREDONYER PASS NO. 1	5750	2-28-63	0	--	0	0	9.7	17.2
TRUCKEE RIVER								
INDEPENDENCE LAKE	8450	3- 1-63	37.0	40	14.6	36	41.1	39.2
SQUAW VALLEY NO. 2	7500	3- 2-63	31.0	44	13.6	NEW COURSE - 1954		61.0
INDEPENDENCE CAMP	7000	3- 1-63	0	--	0	0	24.1	23.4
DONNER SUMMIT	6900	3- 1-63	0	--	0	0	39.6	41.4
SAGE HEN CREEK	6500	3- 2-63	0	--	0	0	18.9	23.8
INDEPENDENCE CREEK	6500	3- 1-63	0	--	0	0	14.7	17.4
TRUCKEE NO. 2	6400	3- 2-63	0	--	0	0	16.9	19.7
DONNER LAKE	5950	NO SURVEY MADE					24.2	NSM
BOCA NO. 2	5900	NO SURVEY MADE					5.3	7.9
LAKE TAHOE BASIN								
RUBICON PEAK NO. 1	8100	3- 3-63	52.0	40	20.7[3]	42	49.1	42.9
HAGANS MEADOW	8000	2-27-63	3.0	80	2.4[3]	13	18.3	20.8
MARLETTE LAKE (NEVADA)	8000	2-26-63	12.0	43	5.2	22	23.5	20.8
RUBICON PEAK NO. 2	7500	3- 3-63	11.0	31	3.4	11	31.5	30.4
ECHO SUMMIT	7450	2-28-63	13.0	41	5.4	14	38.9	35.3
DAGGETTS PASS (NEVADA)	7350	2-26-63	0	--	0	0	12.6	11.8
FREEL BENCH	7300	2-27-63	0	--	0	0	11.9	16.2
WARD CREEK	7000	2-28-63	7.0	57	4.0	9	46.7	39.8
GLENBROOK NO. 2 (NEVADA)	6900	2-25-63	4.0	45	1.8	13	13.9	14.5
RICHARDSONS NO. 2	6500	2-25-63	0	--	0	0	17.4	25.8
UPPER TRUCKEE	6400	2-27-63	0	--	0	0	7.8	13.6
TAHOE CITY	6250	2-28-63	0	--	0	0	11.8	16.4

TABLE 2 - SNOW SURVEY DATA (CONTINUED)

AREA, DRAINAGE BASIN, AND SNOW COURSE 1/	ELEVATION IN FEET	DATE OF SURVEY	DEPTH IN INCHES	DENSITY IN PERCENT	WATER CONTENT			
					IN INCHES	IN PERCENT OF APRIL 1. AVERAGE	APRIL 1 AVERAGE IN INCHES 2/	ONE YEAR AGO IN INCHES
LAHONTAN AREA (CONTINUED)								
CARSON RIVER								
UPPER CARSON PASS	8550	2-26-63	34.3	38	12.9	37	35.2	33.8
LOWER CARSON PASS	8400	2-26-63	32.9	38	12.4	33	37.9	35.4
WALKER RIVER								
VIRGINIA LAKES	9500	2-25-63	36.0	42	15.2	89	17.0	22.2
SONORA PASS	8800	2-25-63	32.0	41	13.2	54	24.4	25.3
MONO LAKE BASIN								
GEM PASS	10400	2-25-63	59.0	37	22.7	69	32.0	NSM
SADDLEBAG LAKE	9800	2-26-63	52.5	38	19.9	59	33.8	NSM
ELLERY LAKE (RHINEDOLLAR)	9600	2-26-63	47.9	51	24.3	80	30.6	NSM
AGNEW PASS	9450	2-24-63	43.7	39	17.2	55	31.4	33.1
GEM LAKE	9150	2-24-63	41.8	44	18.6	64	31.3	30.6
OWENS RIVER								
MONO PASS	11450	2-26-63	55.7	40	20.2	68	32.5	NSM
BISHOP LAKE	11300	2-26-63	48.5	39	18.8	99	19.0	NSM
PIUTE PASS	11300	2-22-63	61.1	37	22.9	67	34.4	37.8
BISHOP PASS	11200	2-27-63	52.0	40	20.8	69	30.1	NSM
COTTONWOOD PASS	11050	3- 4-63	38.4	36	14.0	102	13.7	22.3
EAST PIUTE PASS	10800	2-21-63	43.0	36	15.4	133	11.6	20.1
SAWMILL	10300	2-26-63	38.1	45	17.2	96	18.0	NSM
MAMMOTH PASS	9500	2-27-63	52.6	40	20.8	49	42.3	53.5
NORTH LAKE	9300	2-21-63	25.4	44	11.1	125	8.9	16.9
SOUTH FORK	8850	2-27-63	18.3	33	6.1	122	5.0	NSM
BISHOP PARK	8400	2-22-63	11.9	36	4.3	110	3.9	NSM

1/ COURSES PERTINENT TO MORE THAN ONE BASIN ARE LISTED UNDER EACH BASIN.
2/ AVERAGES ARE COMPUTED FOR THE 30-YEAR PERIOD 1930-59.
3/ DENSITY AND WATER CONTENT ESTIMATED (UNUSUAL ICE CONDITIONS ENCOUNTERED).



DEPTH OF SNOW AT NORDEN

ELEVATION 7000 FEET

DEPARTMENT OF WATER RESOURCES 1963

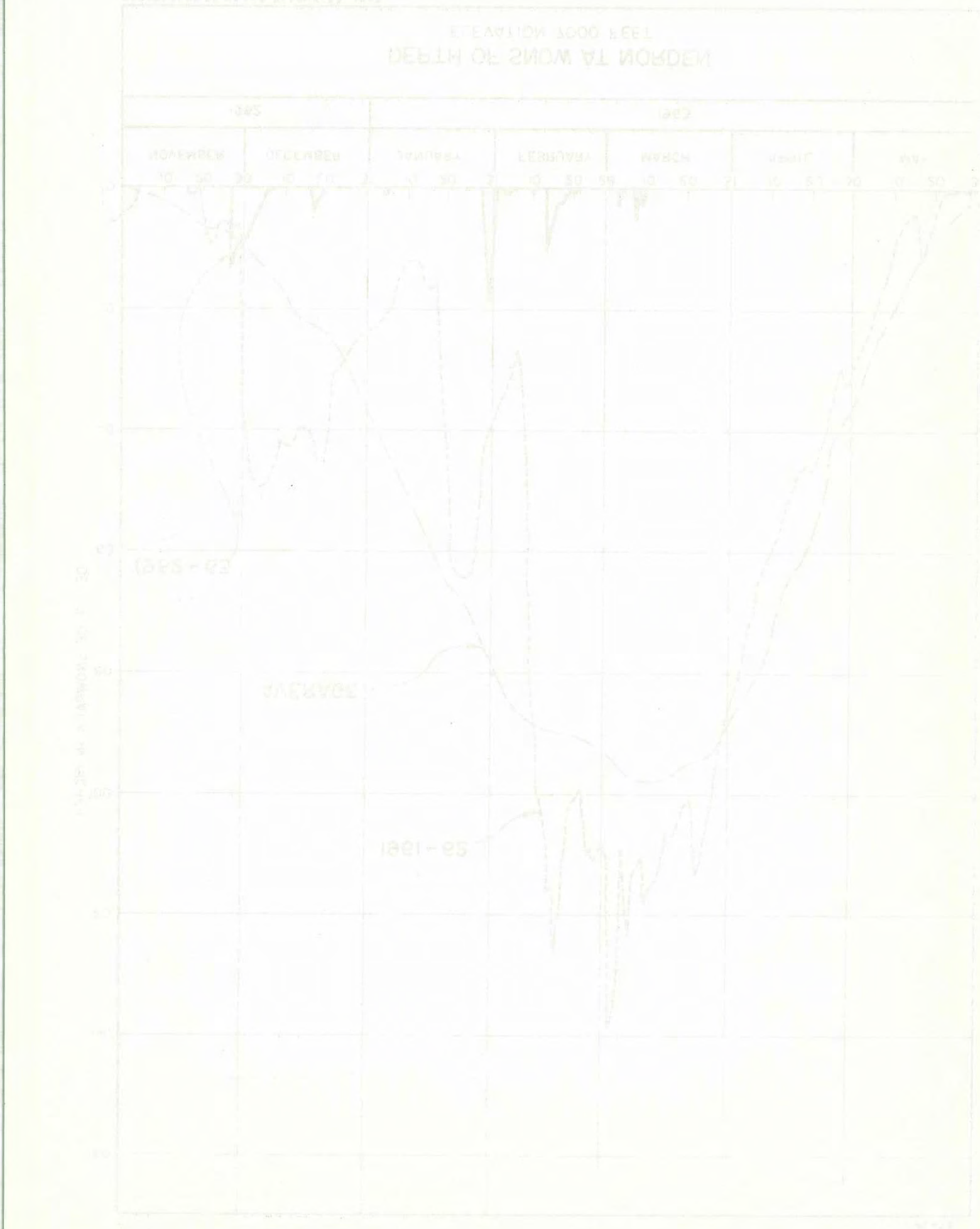


TABLE 3

AERIAL PHOTOGRAPHIC SNOW DEPTH MEASUREMENTS

Area, Drainage Basin, and Aerial Marker	Source of Data 1/	Elevation (Feet)	Date of Measurement	Depth of Snow (Inches)
CENTRAL VALLEY AREA				
American River				
Upper Carson Pass	EBMUD	8500	3- 1-63	33
Phipps Creek	SMUD	7600	2-28-63	0
Lost Corner Mountain	SMUD	7500	2-28-63	0
Silver Lake	EBMUD	7100	3- 1-63	0
Wrights Lake	SMUD	6900	2-28-63	0
Mokelumne River				
Blue Lakes	EBMUD	8000	3- 1-63	36
Pacific Valley	EBMUD	7500	3- 1-63	3
Bear Valley Ridge #1	EBMUD	6700	3- 1-63	0
Stanislaus River				
Highland Meadow	PG&E	8800	2-28-63	39
Lower Relief Valley	PG&E	8100	2-28-63	23
Soda Creek Flat	PG&E	7800	2-28-63	4
Lake Alpine	PG&E	7550	2-28-63	20
Eagle Meadow	PG&E	7550	2-28-63	0
Relief Dam	PG&E	7100	2-28-63	0
San Joaquin River				
Humphreys Basin	SCEC	11600	3- 6-63	60
Emerald Lake	SCEC	10600	3- 6-63	52
Pioneer Basin	SCEC	10400	3- 6-63	56
Island Pass	SCEC	10300	3- 6-63	67
Heart Lake	SCEC	10100	3- 6-63	35
Volcanic Knob	SCEC	10100	3- 6-63	55
Rose Marie	SCEC	10000	3- 6-63	36
Bench Canyon	SCEC	9900	3- 6-63	44
Colby Meadow	SCEC	9800	3- 6-63	28
Agnew Pass	SCEC	9450	2-24-63	44
Kaiser Pass	SCEC	9200	3- 6-63	37
Dutch Lake	SCEC	9100	3- 6-63	36
Coyote Lakes	SCEC	8850	3- 6-63	30
String Meadow	SCEC	8400	3- 6-63	22
Twin Meadows	SCEC	8400	3- 6-63	26
Cora Lakes	SCEC	8200	3- 6-63	28
Mammoth Pass	SCEC	8200	2-28-63	54
Jackass Meadow	SCEC	7000	3- 6-63	Patches

TABLE 3 - AERIAL PHOTOGRAPHIC SNOW DEPTH MEASUREMENTS (CONTINUED)

AREA, DRAINAGE BASIN, AND AERIAL MARKER	SOURCE OF DATA 1/	ELEVATION (FEET)	DATE OF MEASUREMENT	DEPTH OF SNOW (INCHES)
CENTRAL VALLEY AREA (CONTINUED)				
KINGS RIVER				
BISHOP PASS	2/	11200	2-27-63	48
CHARLOTTE RIDGE	2/	10700	2-28-63	54 48
GRANITE BASIN	2/	10400	3- 1-63	56 52
BLACKCAP BASIN	SCEC	10300	3- 6-63	52
SCENIC MEADOW	2/	10200	3- 1-63	36 40
				Cardinal 33
STATE LAKES (RA)	USCE	10200	3- 1-63	48 36
MITCHELL MEADOW (RA)	USCE	9700	3- 1-63	48 52
UPPER BURNT CORRAL	SCEC	9700	3- 6-63	48
UPPER WOODCHUCK MEADOW (RA)	USCE	9200	3- 1-63 4	30 36
KERN			lower woodchuck	45
			rattle snake	52
TYNDALL CREEK	USCE	11500	3- 1-63	48 42
BIG HORN PLATEAU	2/	11450	3- 1-63 foot new	54 3
SIBERIAN PASS	2/	10900	3- 1-63 "	40 3
CHAGOOPA PLATEAU	2/	10200	3- 1-63	48 20 broken cross
WET MEADOW	2/	9200	3- 1-63	30 24
				Shot gun 33
LAHONTAN AREA				
CARSON RIVER				ramshow 3
UPPER FISH VALLEY	NCSS	8100	2-28-63	monache 0 TRACE
POISON FLAT	NCSS	7700	2-28-63	24
				little whitney 6
WALKER RIVER				Casa Vieja 18
CENTER MOUNTAIN	NCSS	9400	2-28-63	72 beach 6
BISHOP CREEK				bonita 12
BISHOP LAKES	CEPC	11300	2-26-63	62
OWENS RIVER				
MT. MORGAN	LADWP	12000	3- 1-63	48
BIG PINE CREEK BASIN	LADWP	11500	3- 1-63	MARKER DOWN
KEARSARGE PASS	LADWP	11500	3- 1-63	60
LAKE DOROTHY	LADWP	11400	3- 1-63	48
SAWMILL PASS	LADWP	11400	3- 1-63	60
COTTONWOOD LAKES	LADWP	11200	3- 1-63	42
TABOOSE PASS	LADWP	11200	3- 1-63	54
HORSESHOE MEADOWS	LADWP	11100	3- 1-63	32
SHEPHERDS PASS	LADWP	11000	3- 1-63	24
GOLDEN TROUT CABIN	LADWP	10600	3- 1-63	32

TABLE 3 - AERIAL PHOTOGRAPHIC SNOW DEPTH MEASUREMENTS (CONTINUED)

AREA, DRAINAGE BASIN, AND AERIAL MARKER	SOURCE OF DATA 1/	ELEVATION (FEET)	DATE OF MEASUREMENT	DEPTH OF SNOW (INCHES)
LAHONTAN AREA (CONTINUED)				
OWENS RIVER (CONTINUED)				
BIG PINE LAKES	LADWP	10100	3- 1-63	36
ROCK CREEK LAKES	LADWP	10000	3- 1-63	MARKER DOWN
ONION VALLEY	LADWP	9000	3- 1-63	36

1/ CEPC - CALIFORNIA ELECTRIC POWER COMPANY; SCEC - SOUTHERN CALIFORNIA EDISON COMPANY; LADWP - LOS ANGELES DEPARTMENT OF WATER AND POWER; DWR - STATE OF CALIFORNIA, DEPARTMENT OF WATER RESOURCES; USCE - UNITED STATES CORPS OF ENGINEERS; PG&E - PACIFIC GAS AND ELECTRIC COMPANY; NCSS - NEVADA COOPERATIVE SNOW SURVEYS; EBMUD - EAST BAY MUNICIPAL UTILITY DISTRICT.

2/ UNITED STATES CORPS OF ENGINEERS AND DEPARTMENT OF WATER RESOURCES COOPERATING.

TABLE 4

SUMMARY OF STORAGE IN MAJOR RESERVOIRS

Area	Number of Reservoirs Reported	Total Capacity (Acre-Feet)	Water in Storage (Acre-Feet)			March 1, 1963, Storage	
			March 1, 1962	February 1, 1963	March 1, 1963	Percent of 10-Year Average	Percent of Capacity
INTRASTATE							
North Coastal	4	2,713,900	1,340,830	2,328,710	2,566,300	106	95
San Francisco Bay	14	509,600	321,290	320,200	331,700	91	62
Central Coastal	6	875,800	500,600	368,930	447,300	97	51
South Coastal	20	1,394,000	417,150	328,720	362,460	94	26
Sacramento Valley	26	9,611,900	6,639,480	6,533,500	7,355,390	106	77
San Joaquin Valley	26	4,855,400	1,526,520	1,769,340	2,496,190	139	51
Lahontan	7	348,200	165,130	200,550	214,100	85	62
Subtotal	103	20,308,800	10,911,000	11,849,950	13,773,440	111	68
INTERSTATE							
North Coastal	3	1,205,100	402,850	447,010	627,670	91	52
Lahontan	3	828,300	82,580	230,560	306,170	68	37
Colorado Desert 1/	3	29,636,000	20,530,700	24,896,200	24,713,200	131	83
Subtotal	9	31,669,400	21,016,130	25,573,770	25,647,040	128	81
TOTAL 1/	112	51,978,200	31,927,130	37,423,720	39,420,480	123	76

1/ Includes data for Lake Mead which regulates flow of the lower Colorado River, the major source of water for the Colorado Desert and South Coastal areas.

TABLE 5

WATER CONTENT OF MAJOR STORAGE RESERVOIRS

Watershed	Reservoir	Operator	Capacity 1/ (Acre-Feet)	Water in Storage as of March 1			
				10-Year Average 1953-1962 (Acre-Feet)	1962 (Acre-Feet)	1963 (Acre-Feet)	1963 in % of Avg.
NORTH COASTAL AREA							
Klamath River	Clear Lake 2/	US Bureau of Reclamation	526,800	262,470	92,780	146,020	56
	Gerber 2/	US Bureau of Reclamation	94,300	43,925	6,310	42,100	96
	Upper Klamath 2/	US Bureau of Reclamation	584,000	380,280	303,760	439,550	115
Trinity River	Trinity Dam	US Bureau of Reclamation	2,447,700	5/	1,189,100	2,392,200	-
Shasta River	Dwinnell	Montague Water Cons Dist	50,000	29,030	23,700	40,350	139
South Eel River	Lake Pillsbury	Pac Gas and Electric Co	93,700	70,620	65,760	65,760	93
Russian River	Lake Mendocino	US Corps of Engineers	122,500	5/	62,970	67,970	-
SAN FRANCISCO BAY AREA							
Conn Creek	Lake Hennessey	City of Napa	31,000	29,560	30,000	31,000	105
Nicasio Creek	Nicasio	Marin Municipal Water Dist	22,500	5/	21,330	22,430	-
Lagunitas Creek	Kent	Marin Municipal Water Dist	16,500	14,640 6/	16,320	5,430	37
	Alpine	Marin Municipal Water Dist	9,200	6,050	6,220	8,800	145
San Pablo Creek	San Pablo 3/	East Bay Mun Utility Dist	43,200	36,840	34,900	23,440	64
San Leandro Creek	Upper San Leandro 3/	East Bay Mun Utility Dist	41,400	32,730	35,580	34,950	107
	Chabot 3/	East Bay Mun Utility Dist	12,600	9,530	7,450	10,410	109
Coyote Creek	Coyote	Santa Clara Valley WCD	24,500	14,240	10,740	16,060	113
	Leroy Anderson	Santa Clara Valley WCD	93,100	43,440	8,570	15,420	36
Los Gatos Creek	Lexington	Santa Clara Valley WCD	21,400	9,000 6/	11,100	21,430	238
	Austrian	San Jose Water Works	6,200	3,830	5,820	6,090	158
Calaveras Creek	Calaveras 3/	City and Co of San Francisco	100,000	71,350	65,610	67,100	94
San Andreas Creek	San Andreas 3/	City and Co of San Francisco	18,500	15,890	17,660	16,820	106
Laguna Creek	Upper Crystal Spgs) 3/	City and Co of San Francisco	69,500	54,210	49,990	52,270	96
San Mateo Creek	Lower Crystal Spgs) 3/						

TABLE 5 - WATER CONTENT OF MAJOR STORAGE RESERVOIRS (CONTINUED)

WATERSHED	RESERVOIR	OPERATOR	CAPACITY 1/ (ACRE-FEET)	WATER IN STORAGE AS OF MARCH 1			
				10-YEAR AVERAGE 1953-1962 (ACRE-FEET)	1962 (ACRE-FEET)	1963 (ACRE-FEET)	1963 IN % OF AVG.
CENTRAL COASTAL AREA							
SALINAS RIVER	SALINAS	SAN LUIS OBISPO CO FCWCD	26,000	19,270	26,100	21,600	112
	NACIMIENTO	MONTEREY COUNTY FCWCD	350,000	5/	201,800	219,800	-
SANTA YNEZ RIVER	GIBRALTAR	SANTA BARBARA CITY	14,800	12,530	14,780	9,270	73
	CACHUMA	US BUREAU OF RECLAMATION	204,900	5/	205,500	184,990	-
CUYAMA RIVER	TWITCHELL	US BUREAU OF RECLAMATION	240,100	5/	46,790	2,720	-
OLD CREEK	WHALE ROCK	CITY OF SAN LUIS OBISPO	40,000	5/	5,630	8,950	-
SOUTH COASTAL AREA							
VENTURA-SANTA CLARA RIVERS							
COYOTE CREEK	CASITAS	VENTURA RIVER MUN WATER DIST	254,000	5/	42,150	50,750	-
PIRU CREEK	LAKE PIRU (LK FELICIA)	UNITED WATER CONS DIST	101,200	16,880 6/	65,050	25,990	154
SAN GABRIEL-SANTA ANA RIVERS							
SAN GABRIEL RIVER	COGSWELL	LA COUNTY FLOOD CONTROL DIST	10,900	1,810	4,800	1,480	82
	SAN GABRIEL	LA COUNTY FLOOD CONTROL DIST	43,800	5,981	22,050	4,880	82
BEAR CREEK	BEAR VALLEY	BEAR VALLEY MUTUAL WATER CO	72,200	11,980	3,400	6,590	55
TRIBUTARY, CAJALCO CR	LAKE MATHEWS 4/	METROPOLITAN WATER DISTRICT	182,000	174,110 6/	171,580	176,640	101
SAN JACINTO RIVER	LAKE HEMET	LAKE HEMET WATER COMPANY	13,400	2,730	1,180	790	29
	RAILROAD CANYON 3/	TEMESCAL WATER COMPANY	14,700	1,800	4,230	2,200	122
SANTIAGO CREEK	SANTIAGO 3/	SERRANO AND CARPENTER ID AND IRVINE COMPANY	25,000	8,720	7,320	2,060	236
SANTA MARGARITA-SAN LUIS REY RIVERS							
SAN LUIS REY RIVER	HENSHAW	VISTA IRRIGATION DISTRICT	194,300	8,540	7,710	6,740	79

TABLE 5 - WATER CONTENT OF MAJOR STORAGE RESERVOIRS (CONTINUED)

WATERSHED	RESERVOIR	OPERATOR	CAPACITY 1/ (ACRE-FEET)	WATER IN STORAGE AS OF MARCH 1			
				10-YEAR AVERAGE 1953-1962 (ACRE-FEET)	1962 (ACRE-FEET)	1963 (ACRE-FEET)	1963 IN % OF AVG.
SOUTH COASTAL AREA (CONTINUED)							
SAN DIEGUITO-SAN DIEGO RIVERS							
SAN DIEGUITO RIVER	LAKE HODGES 3/	CITY OF SAN DIEGO	33,600	6,230 6/	3,690	2,620	42
SAN YSABEL CREEK	SUTHERLAND	CITY OF SAN DIEGO	29,700	3,290 6/	3,000	3,220	98
SAN VICENTE CREEK	SAN VICENTE 3/	CITY OF SAN DIEGO	90,200	51,090	63,550	61,390	120
SAN DIEGO RIVER	EL CAPITAN	CITY OF SAN DIEGO	112,800	15,970	7,940	7,570	48
BOULDER CREEK	CUYAMACA	HELIX IRRIGATION DISTRICT	11,600	260	160	10	4
SWEETWATER-OTAY RIVERS AND COTTONWOOD CREEK							
SWEETWATER RIVER	LAKE LOVELAND	CALIFORNIA WATER AND TELEPHONE COMPANY	25,400	2,350	1,030	1,590	68
	SWEETWATER MAIN 3/		27,700	6,370	2,420	2,370	37
OTAY RIVER	LOWER OTAY	CITY OF SAN DIEGO	56,500	8,620	3,920	3,620	42
COTTONWOOD CREEK	MORENA	CITY OF SAN DIEGO	50,200	1,530	650	500	33
BARRETT	BARRETT	CITY OF SAN DIEGO	44,800	2,040	1,120	1,450	71
CENTRAL VALLEY AREA							
SACRAMENTO RIVER	SHASTA	US BUREAU OF RECLAMATION	4,500,000	3,483,140	3,621,200	3,437,600	99
	WHISKEYTOWN	US BUREAU OF RECLAMATION	241,100			7/	
FEATHER RIVER	MOUNTAIN MEADOWS	PAC GAS AND ELECTRIC COMPANY	24,000	11,320	8,030	20,920	185
	FRENCHMAN	DEPT OF WATER RESOURCES	51,000	5/	620	23,920	-
	LAKE ALMANOR	PAC GAS AND ELECTRIC COMPANY	649,800	412,460	383,960	422,360	102
	BUCKS STORAGE	PAC GAS AND ELECTRIC COMPANY	101,700	52,870	54,450	90,840	172
	BUTT VALLEY	PAC GAS AND ELECTRIC COMPANY	49,900	38,370	43,160	40,100	105
	LITTLE GRASS VALLEY	OROVILLE WYANDOTTE ID	93,000	5/	9,660	75,500	-
	SLY CREEK	OROVILLE WYANDOTTE ID	65,000	5/	42,000	51,900	-
YUBA RIVER	BOWMAN LAKE	NEVADA IRRIGATION DISTRICT	69,800	20,500	5,200	65,080	318
	SCOTTS FLAT	NEVADA IRRIGATION DISTRICT	27,400	21,520	25,070	26,710	124
	SPAULDING SYSTEM	PAC GAS AND ELECTRIC COMPANY	137,400	62,980	57,620	98,570	157

TABLE 5 - WATER CONTENT OF MAJOR STORAGE RESERVOIRS (CONTINUED)

WATERSHED	RESERVOIR	OPERATOR	CAPACITY 1/ (ACRE-FEET)	WATER IN STORAGE AS OF MARCH 1			
				10-YEAR AVERAGE 1953-1962 (ACRE-FEET)	1962 (ACRE-FEET)	1963 (ACRE-FEET)	1963 IN % OF AVG.
CENTRAL VALLEY AREA (CONTINUED)							
BEAR RIVER	COMBIE	NEVADA IRRIGATION DISTRICT	7,800	5,260	4,780	5,560	106
AMERICAN RIVER	TWIN LAKES	PAC GAS AND ELECTRIC COMPANY	21,600	4,870	4,970	10,440	214
	SILVER LAKE	PAC GAS AND ELECTRIC COMPANY	8,600	400	160	3,820	955
	LOON LAKE	SACRAMENTO MUN UTILITY DIST	76,500			7/	
	ICE HOUSE	SACRAMENTO MUN UTILITY DIST	46,000	5/	11,000	20,140	-
	UNION VALLEY	SACRAMENTO MUN UTILITY DIST	271,000	5/	0	122,140	-
	STUMPY MEADOWS	GEORGETOWN DIVIDE PUD	20,000	5/	5,800	20,000	-
	FOLSOM	US BUREAU OF RECLAMATION	1,010,300	545,830 6/	626,600	626,300	115
STONY CREEK	EAST PARK	US BUREAU OF RECLAMATION	50,900	42,500	44,480	48,520	114
	STONY GORGE	US BUREAU OF RECLAMATION	50,000	43,230	49,660	49,990	115
	BLACK BUTTE	US CORPS OF ENGINEERS	160,000			7/	
CACHE CREEK	CLEAR LAKE	CLEAR LAKE WATER COMPANY	314,000	273,650	282,000	307,000	112
PUTAH CREEK	BERRYESSA	US BUREAU OF RECLAMATION	1,602,300	5/	1,163,850	1,441,780	-
COSUMNES RIVER	JENKINSON LAKE (SLY PK)	US BUREAU OF RECLAMATION	41,000	32,570 6/	14,780	38,890	119
MOKELUMNE	LOWER BEAR	PAC GAS AND ELECTRIC COMPANY	48,500	10,172 6/	7,040	31,760	312
	SALT SPRINGS	PAC GAS AND ELECTRIC COMPANY	140,900	18,430	11,450	96,090	521
	PARDEE	EAST BAY MUN UTILITY DISTRICT	210,000	175,760	158,140	179,460	102
STANISLAUS RIVER	RELIEF	PAC GAS AND ELECTRIC COMPANY	15,600	1,240	300	5,000	403
	STRAWBERRY	PAC GAS AND ELECTRIC COMPANY	18,300	5,560	4,520	15,100	272
	DONNELLS	OAKDALE & SO SAN JOAQUIN ID	64,700	19,650 6/	16,750	43,790	223
	HARTLEY LAKE	OAKDALE & SO SAN JOAQUIN ID	98,300	41,520 6/	25,160	57,020	137
	MELONES	PAC GAS AND ELECTRIC COMPANY	112,600	46,870	68,860	104,190	222
	TULLOCH	OAKDALE & SO. SAN JOAQUIN ID	68,200	48,680 6/	45,340	50,710	104

TABLE 5 - WATER CONTENT OF MAJOR STORAGE RESERVOIRS (CONTINUED)

WATERSHED	RESERVOIR	OPERATOR	CAPACITY 1/ (ACRE-FEET)	WATER IN STORAGE AS OF MARCH 1			
				10-YEAR AVERAGE 1953-1962 (ACRE-FEET)	1962 (ACRE-FEET)	1963 (ACRE-FEET)	1963 IN % OF AVG.
CENTRAL VALLEY AREA (CONTINUED)							
TUOLUMNE RIVER	CHERRY LAKE (CHERRY VALLEY)	CITY AND CO OF SAN FRANCISCO	268,200	47,700 6/	27,840	151,800	318
	LAKE ELEANOR	CITY AND CO OF SAN FRANCISCO	26,100	15,730	8,870	9,020	57
	HETCH HETCHY	CITY AND CO OF SAN FRANCISCO	360,400	105,070	58,440	156,840	149
	DON PEDRO	TURLOCK AND MODESTO ID	290,400	163,560	170,910	189,400	116
	TURLOCK LAKE (OWEN)	TURLOCK AND MODESTO ID	49,000	34,810	25,600	37,900	109
	MODESTO	MODESTO IRRIGATION DISTRICT	27,000	14,700	15,800	12,960	88
MERCED RIVER	LAKE MCCLURE	MERCED IRRIGATION DISTRICT	281,000	129,040	144,560	189,600	147
SAN JOAQUIN RIVER	CRANE VALLEY (BASS LK)	PAC GAS AND ELECTRIC CO	45,400	22,280	28,590	32,430	145
	THOMAS A. EDISON	SOUTHERN CALIF EDISON CO	125,200	46,240 6/	23,680	47,910	103
	FLORENCE LAKE	SOUTHERN CALIF EDISON CO	64,600	360	350	320	89
	HUNTINGTON LAKE	SOUTHERN CALIF EDISON CO	89,800	34,870	41,320	61,900	177
	SHAVER LAKE	SOUTHERN CALIF EDISON CO	135,400	25,020	17,840	48,160	192
	MAMMOTH POOL	SOUTHERN CALIF EDISON CO	122,700	5/	21,170	53,880	-
	MILLERTON LAKE	US BUREAU OF RECLAMATION	520,600	323,760	370,300	422,400	130
KINGS RIVER	PINE FLAT	US CORPS OF ENGINEERS	1,013,400	447,790 6/	307,700	513,200	114
	WISHON	PAC GAS AND ELECTRIC CO	128,600	5/	58,720	34,100	-
	COURTRIGHT	PAC GAS AND ELECTRIC CO	129,900	5/	0	59,680	-
KERN RIVER	ISABELLA	US CORPS OF ENGINEERS	570,000	102,930 6/	43,390	174,300	170
KAWEAH	TERMINUS	US CORPS OF ENGINEERS	150,000	5/	0	7,980	-
TULE	SUCCESS	US CORPS OF ENGINEERS	80,000	5/	510	16,600	-

TABLE 5 - WATER CONTENT OF MAJOR STORAGE RESERVOIRS (CONTINUED)

WATERSHED	RESERVOIR	OPERATOR	CAPACITY 1/ (ACRE-FEET)	WATER IN STORAGE AS OF MARCH 1			
				10-YEAR AVERAGE 1953-1962 (ACRE-FEET)	1962 (ACRE-FEET)	1963 (ACRE-FEET)	1963 IN % OF AVG.
LAHONTAN AREA							
TRUCKEE RIVER	LAKE TAHOE 2/	TRUCKEE-CARSON ID	744,600	418,030	58,280	235,700	56
LITTLE TRUCKEE RIVER	BOCA 2/	TRUCKEE-CARSON ID	41,200	5,450	3,000	31,500	578
EAST WALKER RIVER	BRIDGEPORT 2/	WALKER RIVER IRRIGATION DIST	42,500	28,620	17,580	38,970	136
MONO LAKE BASIN	SADDLEBAG LAKE	CALIFORNIA ELECTRIC POWER CO	11,100	24,960	3,330	3,430	14
	GEM LAKE	CALIFORNIA ELECTRIC POWER CO	17,600	4,500	4,650	420	9
	GRANT LAKE	CITY OF LOS ANGELES	47,500	32,890	11,480	29,020	88
OWENS RIVER	LAKE CROWLEY	CITY OF LOS ANGELES	183,500	130,520	87,110	125,150	96
	TINNEMAHA	CITY OF LOS ANGELES	16,600	2,490	6,360	0	0
	HAIWEE (SOUTH)	CITY OF LOS ANGELES	58,500	54,200	49,380	51,040	94
	HILLSIDE	CALIF ELECTRIC POWER CO	13,400	2,980	2,820	5,040	169
COLORADO DESERT AREA							
COLORADO RIVER	LAKE MEAD 2/	US BUREAU OF RECLAMATION	27,207,000	16,610,300	18,249,000	22,496,000	135
	LAKE MOJAVE 2/	US BUREAU OF RECLAMATION	1,810,000	1,703,400	1,749,800	1,701,500	100
	LAKE HAVASU 2/	US BUREAU OF RECLAMATION	619,000	572,460	531,900	515,700	90

1/ TOTAL CAPACITY TO THE NEAREST HUNDRED ACRE-FEET.
2/ INTERSTATE RESERVOIR USED JOINTLY BY CALIFORNIA AND ADJACENT STATES.
3/ INCLUDES FOREIGN WATER.
4/ STORES ONLY IMPORTED COLORADO RIVER WATER.
5/ PERIOD OF OPERATION TOO SHORT TO COMPUTE A REPRESENTATIVE AVERAGE.
6/ LESS THAN 10-YEAR AVERAGE.
7/ UNDER CONSTRUCTION.

TABLE 6

RUNOFF DATA[1]

Area, Stream, and Station	Source of Data[2]	February, 1963				October 1, 1962, Through February 28, 1963			
		Measured Flow (Acre-Feet)	Unimpaired Runoff[3] Total For Month (Acre-Feet)	Unimpaired Runoff[3] 50-Year[4] Average (Acre-Feet)	Unimpaired Runoff[3] In % of Avg.	Measured Flow (Acre-Feet)	Unimpaired Runoff[3] Total For Season (Acre-Feet)	Unimpaired Runoff[3] 50-Year[4] Average (Acre-Feet)	Unimpaired Runoff[3] In % of Avg.
NORTH COASTAL AREA									
Trinity at Lewiston	USGS-USBR	89,100	302,700	135,200	224	141,000	750,300	375,200	200
Klamath, Copco to Somesbar	USGS	997,400[7]	1,023,400	557,300	185	2,868,900[7]	2,971,700	1,927,300	155
Eel at Scotia	USGS	1,373,000	1,389,800	1,102,300	126	3,529,000	3,643,000	3,402,800	107
Russian at Healdsburg	USGS	253,200	221,400	162,400	136	596,700	511,100	570,400	90
SAN FRANCISCO BAY AREA									
Napa near St. Helena	USGS	22,380	22,380[5]	13,840	162	63,420	63,420[5]	44,890	141
Coyote Creek near Madrone	USGS	1,130	13,170	14,960	88	2,080	32,740	32,320	101
CENTRAL COASTAL AREA									
Arroyo Seco near Soledad	USGS	81,800	81,800[5]	33,460	245	121,400	121,400[5]	70,950	170
Nacimiento below Nacimiento Dam, near Bradley	USGS	50	70,850	52,710	134	37,600	165,100	111,760	148
SOUTH COASTAL AREA									
Sespe Creek near Fillmore	USGS	5,500	7,590	16,180	47	5,830	9,580	34,870	27
Arroyo Seco near Pasadena	USGS	630	630[5]	1,600	39	870	870[5]	3,280	27
Santa Ana near Mentone	USGS	470	1,800	9,240	20	470	7,040	25,900	27
SACRAMENTO VALLEY AREA									
Sacramento, Inflow to Shasta	USBR	908,200	908,200[5]	766,800	118	2,899,900	2,899,900[5]	2,480,500	117
Sacramento near Red Bluff	USGS-USBR	1,105,000	1,360,200	1,262,500	108	3,539,000	4,134,200	3,811,700	108
Feather near Oroville	USGS	961,800	1,083,100	526,500	206	2,928,000	3,142,100	1,558,200	202
Yuba at Smartville[6]	USGS-PG&E	538,000	633,800	272,700	233	1,335,600	1,637,700	790,500	206
Bear near Wheatland	USGS	90,400	81,000	71,300	113	263,400	244,400	185,200	132
American, Inflow to Folsom	USGS-PG&E	642,800[7]	733,200	310,300	237	1,294,100[7]	1,536,000	851,200	180
Cosumnes at Michigan Bar	USGS	116,700	127,950	65,720	195	168,600	183,090	152,250	120
Mokelumne, Inflow to Pardee	EBMUD	64,470[7]	164,530	55,120	298	239,890[7]	260,350	153,380	170

TABLE 6 - RUNOFF DATA[1]

Area, Stream, and Station	Source of Data[2]	February, 1963				October 1, 1962, Through February 28, 1963			
		Measured Flow (Acre-Feet)	Unimpaired Runoff[3] Total For Month (Acre-Feet)	Unimpaired Runoff[3] 50-Year[4] Average (Acre-Feet)	Unimpaired Runoff[3] In % of Avg.	Measured Flow (Acre-Feet)	Unimpaired Runoff[3] Total For Season (Acre-Feet)	Unimpaired Runoff[3] 50-Year[4] Average (Acre-Feet)	Unimpaired Runoff[3] In % of Avg.
SAN JOAQUIN VALLEY AREA									
Stanislaus, inflow to Melones	PG&E	142,100[7]	206,800	84,300	245	227,700[7]	286,100	230,700	124
Tuolumne, inflow to Don Pedro	USGS-CCSF	173,700[7]	334,900	135,100	248	466,000[7]	453,100	376,500	120
Merced, inflow to Exchequer	USGS	68,000[7]	174,000	78,900	221	79,100[7]	230,500	203,900	114
San Joaquin, inflow to Friant	USGS-USBR	2,800[7]	207,800	92,200	225	20,700[7]	330,000	271,500	122
Kings, inflow to Pine Flat	USGS-USCE	5,400[7]	193,000	80,000	242	51,700[7]	306,000	236,300	129
Kaweah near Three Rivers	USGS	88,470[7]	88,470[5]	28,010	315	130,910[7]	130,910[5]	78,970	166
Tule, inflow to Success	USGS-USCE	25,500[7]	29,000	19,800	147	31,540[7]	41,930	46,900	90
Kern near Bakersfield	KCLC	24,180	101,600	39,760	255	83,370	167,780	135,350	124
LAHONTAN AREA									
Truckee, Tahoe to Farad	USGS	96,660	96,910	17,100	565	218,830	233,180	65,800	354
Owens, near Round Valley	LADW&P	4,090	15,280	10,300	149	58,910	60,830	53,300	113
COLORADO DESERT AREA									
Colorado near Grand Canyon	USGS-USBR	370,900	370,900[5]	395,300[8]	94	1,902,500	1,902,500[5]	2,136,800[8]	89

1/ All data preliminary, subject to revision.

2/ USGS - United States Geological Survey; PG&E - Pacific Gas and Electric Company; USBR - United States Bureau of Reclamation; KCLC - Kern County Land Company; LADW&P - Los Angeles Department of Water and Power; EBMUD - East Bay Municipal Utility District; USCE - United States Corps of Engineers.

3/ Corrected for upstream regulation.

4/ Computed for the 50-year period 1907-08 through 1956-57; for stations with less than 50 years of record, averages were estimated by comparison with stations having records for the 50-year period.

5/ Uncorrected for upstream regulation.

6/ Total of Narrows Dam spill, flow through Narrows Powerhouse and Deer Creek near Smartville.

7/ Measured flow at other than listed location as follows: Klamath below Iron Gate Dam and at Somesbar; American at Fair Oaks; Mokelumne near Mokelumne Hill; Stanislaus below Melones Powerhouse; Tuolumne above La Grange Dam; Merced below Exchequer; San Joaquin below Friant Dam; Kings below Pine Flat Dam; Tule below Success Dam; Kaweah at Three Rivers and South Fork Kaweah at Three Rivers.

8/ Based on the 34-year period 1922-23 through 1955-56.

TABLE 7

ESTIMATED DISCHARGE TO THE OCEAN
FROM SELECTED STREAMS IN SOUTHERN CALIFORNIA

Area and Stream	February 1963				Discharge During February 1962 (Acre-Feet)
	Discharge Duration In Days	Date of Maximum Instantaneous Discharge	Maximum Instantaneous Discharge (Second-Feet)	Total Discharge (Acre-Feet)	
CENTRAL COASTAL AREA					
Santa Maria River	0	0	0	0	23,270
Santa Ynez River	20	10	480	2,110	40,860
SOUTH COASTAL AREA					
Ventura River	28	9	459	1,700	78,500
Santa Clara River	20	10	5,100	5,450	221,580
Ballona Creek	28	9	9,710	7,610	41,420
Dominguez Channel	28	10	1,507	7,650	20,320
Los Angeles River	28	9	31,420	21,620	66,090
Los Cerritos Channel	28	10	3,610	2,280	4,650
San Gabriel River	4	9	3,610	4,450	34,730 1/
Coyote Creek	9	10	4,640	4,500	1/
Santa Ana River	12	11	113	799	2/
Santa Ana Delhi Drain	NR	NR	NR	NR	NR
Peters Canyon Drain	28	9	192	321	842
Aliso Creek	2	10	88	59	125
Trabuco Creek	5	10	9	11	619
San Juan Creek	28	10	36	192	3,650
Santa Margarita River	0	0	0	0	0
San Luis Rey River	0	0	0	0	0
Tia Juana River	0	0	0	0	13

1/ February 1962 data is combined discharge of San Gabriel River and Coyote Creek.
2/ Records lost.

TABLE 8

TABLE 8 - WATER SPREAD AT MAJOR ARTIFICIAL RECHARGING GROUNDS IN SOUTHERN CALIFORNIA

Artificial Recharging Project	Ground Water Basin	Source of Water	Agency Conducting Spreading	Estimated Amounts Spread (Acre-Feet)	
				Oct. 1, 1962-Feb. 28, 1963	February 1963
Ojai	Ojai Valley	Matilija Dam on Matilija Creek	Ventura County Flood Control District	0	0
Piru	Piru	Piru Creek	United Water Conservation District	60	0
Saticoy	Oxnard Plain Forebay	Santa Clara River	United Water Conservation District	3,600	2,440
El Rio	Oxnard Plain Forebay	Santa Clara River	United Water Conservation District	250	250
Injection well	Oxnard Plain Pressure Area	Ground water at El Rio via El Rio - Port Hueneme conduit	United Water Conservation District	0	0
Lopez	Tujunga	Lopez and Pacoima Reservoirs via pipeline	Los Angeles County Flood Control District	0	0
Pacoima	San Fernando	Pacoima Wash	Los Angeles County Flood Control District	313	268
Branford	San Fernando	Storm runoff collected by Branford-Catara Channel	Los Angeles County Flood Control District	162	138[E]
Hansen	San Fernando	Tujunga Wash	Los Angeles County Flood Control District	0	0
Los Angeles River Headworks	San Fernando	Los Angeles River	Los Angeles Department of Water and Power	2,546	337

TABLE 8 - WATER SPREAD AT MAJOR ARTIFICIAL RECHARGING GROUNDS IN SOUTHERN CALIFORNIA (CONTINUED)

Artificial Recharging Project	Ground Water Basin	Source of Water	Agency Conducting Spreading	Estimated Amounts Spread (Acre-Feet)	
				Oct. 1, 1962-Feb. 28, 1963	February 1963
West Coast Basin Barrier Project	West Coast	Colorado River[1/]	Los Angeles County Flood Control District	1,625	348
Dominguez Gap	West Coast	Los Angeles River and street runoff	Los Angeles County Flood Control District	632	102.2
Arroyo Seco	Monk Hill	Arroyo Seco	Los Angeles County Flood Control District	144	144
Eaton Wash	Pasadena Subarea	Eaton Wash	Los Angeles County Flood Control District	215	199
Sierra Madre	Santa Anita Subarea	Santa Anita Creek, Little Santa Anita Creek, and street runoff	City of Sierra Madre Water Department	356.5	245.5
Santa Anita	Santa Anita Subarea	Santa Anita Creek	Los Angeles County Flood Control District	196	64
Sawpit	Main San Gabriel	Sawpit Creek	Los Angeles County Flood Control District	76	76
Santa Fe Reservoir	Main San Gabriel	San Gabriel River	Los Angeles County Flood Control District	61	26
Eaton	Main San Gabriel	Eaton Wash	Los Angeles County Flood Control District	0	0
Live Oak	Live Oak	Live Oak	Los Angeles County Flood Control District	0	0

TABLE 8 - WATER SPREAD AT MAJOR ARTIFICIAL RECHARGING GROUNDS IN SOUTHERN CALIFORNIA (CONTINUED)

ARTIFICIAL RECHARGING PROJECT	GROUND WATER BASIN	SOURCE OF WATER	AGENCY CONDUCTING SPREADING	ESTIMATED AMOUNTS SPREAD (ACRE-FEET)	
				OCT. 1, 1962- FEB. 28, 1963	FEBRUARY 1963
RIALTO - BASELINE	BUNKER HILL	STORM RUNOFF	SAN BERNARDINO COUNTY FLOOD CONTROL DISTRICT	8	1
SAN JACINTO	SAN JACINTO	SAN JACINTO RIVER	RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DIST	2.0	2.0
THOMPSON CREEK	CLAREMONT HEIGHTS	THOMPSON, COBAL, WILLIAMS, PALMER, AND PADUA CREEKS	POMONA VALLEY PROTECTIVE ASSOCIATION	0	0
POMONA	CLAREMONT HEIGHTS	SAN ANTONIO CREEK VIA LOOP MERSERVE CANYON WATER COMPANY PIPE LINE	CITY OF POMONA WATER DEPARTMENT	25	25
SAN ANTONIO	CLAREMONT HEIGHTS	SAN ANTONIO CREEK	POMONA VALLEY PROTECTIVE ASSOCIATION	0	0
CUCAMONGA CREEK (UPPER)	CUCAMONGA	FRANKISH AND STAMM TUNNEL AND SAN ANTONIO CREEK VIA PIPE LINE AND 19TH STREET STORM DRAIN	SAN ANTONIO WATER COMPANY AND SAN BERNARDINO COUNTY FLOOD CONTROL DISTRICT	287	239
RED HILL	CUCAMONGA	STORM RUNOFF AND DRAINAGE FROM CITRUS ORCHARDS	SAN BERNARDINO COUNTY FLOOD CONTROL DISTRICT	30	24
MILLER STREET	SANTA ANA FOREBAY	COLORADO RIVER 1/	ORANGE COUNTY FLOOD CONTROL DISTRICT	19,300	2,780
EIGHTH STREET	CHINO	CUCAMONGA CREEK AND STORM RUNOFF	SAN BERNARDINO COUNTY FLOOD CONTROL DISTRICT	14.04	11.86

TABLE 8 - WATER SPREAD AT MAJOR ARTIFICIAL RECHARGING GROUNDS IN SOUTHERN CALIFORNIA (CONTINUED)

ARTIFICIAL RECHARGING PROJECT	GROUND WATER BASIN	SOURCE OF WATER	AGENCY CONDUCTING SPREADING	ESTIMATED AMOUNTS SPREAD (ACRE-FEET)	
				OCT. 1, 1962-FEB. 28, 1963	FEBRUARY 1963
DAY CANYON	CHINO	DAY CANYON	ETIWANDA WATER COMPANY	20	20
LITTLE SAN GORGONIO	BEAUMONT	LITTLE SAN GORGONIO CREEK	RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DIST	3	3
ARLINGTON	TEMESCAL	STORM RUNOFF VIA ARLINGTON DRAIN	RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DIST	65	65
COLDWATER CREEK	COLDWATER	COLDWATER, INDIAN, AND HORSETHIEF CREEKS, AND RAILROAD CANYON RESERVOIR	TEMESCAL WATER COMPANY	21	21
MAYHEW WASH	COLDWATER	MAYHEW WASH	TEMESCAL WATER COMPANY	4	4
INDIAN CREEK	LEE LAKE	INDIAN CREEK	TEMESCAL WATER COMPANY	0	0
HORSETHIEF CREEK	LEE LAKE	HORSETHIEF CREEK	TEMESCAL WATER COMPANY	0	0
SHORB	SANTA ANA NARROWS	SANTA ANA RIVER AND COLORADO RIVER[1/]	ANAHEIM UNION WATER COMPANY	1,871.8	113
PETERS CANYON	IRVINE BASIN	COLORADO RIVER[1/]	ORANGE COUNTY WATER DISTRICT	165	24
CRILL MEMORIAL	SANTA ANA FOREBAY	COLORADO RIVER[1/]	ORANGE COUNTY WATER DISTRICT	26,723.6	1,596.0
YORBA	YORBA LINDA	SANTA ANA RIVER AND COLORADO RIVER[1/]	ANAHEIM UNION WATER COMPANY	0	0

TABLE 8 - WATER SPREAD AT MAJOR ARTIFICIAL RECHARGING GROUNDS IN SOUTHERN CALIFORNIA (CONTINUED)

ARTIFICIAL RECHARGING PROJECT	GROUND WATER BASIN	SOURCE OF WATER	AGENCY CONDUCTING SPREADING	ESTIMATED AMOUNTS SPREAD (ACRE-FEET)	
				OCT. 1, 1962- FEB. 28, 1963	FEBRUARY 1963
SANTA ANA RIVER NEAR OLIVE	SANTA ANA FOREBAY	COLORADO RIVER 3/	ORANGE COUNTY WATER DISTRICT	5,710	5,572
GARDNER (BATAVIA STREET)	SANTA ANA FOREBAY	SANTA ANA RIVER AND COLORADO RIVER 1/	SANTA ANA VALLEY IRRIGATION COMPANY AND ORANGE COUNTY WATER DISTRICT	0	0
GOMBER AND HAZARD	SANTA ANA FOREBAY	SANTA ANA RIVER AND COLORADO RIVER 1/	ANAHEIM UNION WATER COMPANY	1,423.7	51.5
PLACENTIA	SANTA ANA FOREBAY	STORM RUNOFF, SANTA ANA RIVER AND COLORADO RIVER 1/	ANAHEIM UNION WATER COMPANY	34.8	17.8
WEST ANAHEIM	SANTA ANA FOREBAY	RUNOFF FROM CITY OF ANAHEIM	ORANGE COUNTY FLOOD CONTROL DISTRICT	256.1	233.5
SAN DIEGO CREEK	IRVIN BASIN	COLORADO RIVER 1/	ORANGE COUNTY WATER DISTRICT	1,407.9	125.2
LITTLE JOAQUIN	IRVIN BASIN	COLORADO RIVER 1/	ORANGE COUNTY WATER DISTRICT	0	0

1. VIA METROPOLITAN WATER DISTRICT AQUEDUCT.
2. VIA METROPOLITAN WATER DISTRICT AQUEDUCT AND MIDDLE FEEDER.
3. AMOUNT OF COLORADO RIVER WATER PURCHASED AND RELEASED INTO SANTA ANA RIVER FROM THE METROPOLITAN WATER DISTRICT LOWER FEEDER AT A POINT ABOUT SIX MILES DOWNSTREAM FROM PRADO DAM.
4. VIA METROPOLITAN WATER DISTRICT AQUEDUCT AND UPPER FEEDER.