STATE OF CALIFORNIA

Department of Public Works

SACRAMENTO

DIVISION OF WATER RESOURCES
401 PUBLIC WORKS BUILDING

CALIFORNIA COOPERATIVE SNOW SURVEYS

EDWARD HYATT, STATE ENGINEER
CHIEF OF DIVISION

SNOW SURVEY AND PRECIPITATION DATA AND SEASONAL FORECAST OF STREAM FLOW

APRIL 1, 1933

This bulletin presents the results of the season's most important snow surveys as respecting predictions for spring and summer water supply. These are the surveys made in the latter part of March at all of the snow courses throughout the Sierra. The bulletin gives also the available precipitation data to April 1, for the mountain stations of the U. S. Weather Bureau, State, Districts and Public Utilities and, based upon the Snow Survey and precipitation data, the seasonal forecast for 1933 water supply. The snow pack at this time may be taken as indicative of the April-July stream flow but present estimates may be modified somewhat in accordance with subsequent storms and conditions.

In general, this season's snow pack as measured in inches of water content averages from 60 to 90 per cent of last year's pack, with a general average of about 75 per cent. A marked exception is shown by three snow courses in the Upper Sacramento basin, Mt. Shasta, Mt. Lassen and Snow Mountain, which average 10 per cent greater pack than in 1932. Owens and Mono Basin courses average from 40 to 55 per cent of last year's pack.

For the areas where the snow surveys have been conducted for a sufficient number of years to permit the development of tentative normals, the Western Sierra slope pack varies from about normal to 35 per cent below normal with a general average of about 20 per cent below normal. Eastern slope basins average from 25 to 50 per cent below normal.

The data from the precipitation stations indicate, in general, that this season's precipitation to April 1st averages 30 per cent below normal in Upper Sacramento basin, 40 to 50 per cent below normal from Feather to Mokelumne basins, 25 to 35 per cent below from Stanislaus to Upper San Joaquin basins, 10 to 20 per cent below from Kings to Kern basins, and 30 to 40 per cent below in San Gabriel, Santa Ana and Los Angeles basins. Eastern slope basins average 35 to 40 per cent below normal from Truckee to Walker, 50 per cent below in Mono, and 20 to 35 per cent below in Owens.

Based upon all available precipitation and snow data, the estimated 1932-33 (October to September) seasonal stream flow in the basins of the Sacramento and San Joaquin rivers and major tributaries is 30 to 50 per cent of the mean for the 40-year period 1889-1929; and for the combined Sacramento-San Joaquin flow the estimate is 43 per cent of the 40-year mean. In the Kings, Kaweah and Kern basins the estimated seasonal stream flow is 55 to 60 per cent of the mean.

Table 1 gives a summary by stream basins of the snow pack in per cent of the 1932 pack and in per cent of normal, and the precipitation to April 1st in per cent of normal.

TABLE 1

SUMMARY OF SEASONAL PRECIPITATION AND SNOW PACK - APRIL 1, 1933

AVERAGES BY STREAM BASINS

Stream Basin	Precipitation: To April 1st in per cent of Normal	Snow Pack [1]: In per cent of 1932 Pack	Snow Pack [1]: In per cent of Normal [2]
Upper Pit		3/4 87	3/4 82
Upper Sacramento-McCloud-Lower Pit Kennett	72	110	64
Feather	51	92	78
Yuba @ Smartsville	57	86	104
American	54	74	79
Mokelumne	58	67	70
Stanislaus Knights Ferry	69	64	74
Tuolumne	63	70	81
Merced	66	72	68
Upper San Joaquin Friant	74	58	64
Kings	87	64	76
Kaweah	79	70	93
Kern	88	89	105
Los Angeles	62		
San Gabriel	68		
Santa Ana	64		
Truckee	63	72	68
Tahoe		66	74
Carson		50	50
Walker	60		
West		59	62
East		62	65
Mono	51		
Leevining Creek		54	66
Rush Creek		56	73
Owens	69		
Upper Mammoth-Hot Creek	63	45	60
Rock Creek Rock Creek		47	64
Bishop Creek	64	41	56
Big Pine Creek Big Pine	79	49	81
Cottonwood Creek Cottonwood Creek		47	57

1 Referred to inches of water content.

2 Few snow courses have a period of record of sufficient length to develop true normals but where the period warrants it, tentative normals have been set up by comparison with long-time stream flow records. Due to the large percentage of short record courses and to the present limited number and distribution of all courses, the figures in this column may not be necessarily representative of the entire stream basin.

3 3 courses - Cedar Pass, Eagle Peak, Adin Mountain.

4 3 courses - Mt. Shasta, Mt. Lassen, Snow Mountain.

TABLE 2

STREAM FLOW FORECASTS - APRIL 1, 1933

Drainage Area or Stream Gaging Station	Snow Pack 1 in per cent of Normal For Drainage Area	April-July Stream Flow - Acre-feet 2: 43 Year Normal (1890-1932)	April-July Stream Flow - Acre-feet 2: Estimated 1933 Flow
South Fork Pit River near Likely	79	41000	32400
Pit River at Ydalpom	71	1311000	931000
North Fork Feather River near Prattville	76 1	352000	268000
Bowman Area-Middle Yuba and Canyon Creek	104 2	96300	100000
South Fork Yuba River at Langs Crossing	97	247000	240000
North Fork American River at Colfax	90	325000	293000
American River at Fairoaks	79 3	1607000	1270000
North Fork Mokelumne River near West Point	69	475000	328000
Mokelumne River near Clements	70 4	557000	390000
Middle Fork Stanislaus River near Avery	68	401000	273000
Stanislaus River near Knights Ferry	74 5	865000	640000
Tuolumne River near Hetch Hetchy	68	692000	471000
Tuolumne River at Jacksonville Refigure	81 6	1379000	1120000
Merced River at Pohono Bridge	75	429000	322000
Merced River at Exchequer	68 7	730000	496000
San Joaquin River above Big Creek	63	1212000	764000
San Joaquin River near Friant	64 8	1409000	902000
Dinkey Creek at Mouth	68	133000	90400
North Fork Kings River above Mouth	74	470000	348000
Kings River near Hume	83	838000	696000
Kings River at Piedra	76 9	1383000	1050000
Kaweah River near Three Rivers	93 10	297000	276000
Kern River near Bakersfield	105 11	466000	489000
Truckee River at Iceland 3	68 12	326000	220000
Lake Tahoe 3	74 13	Lake Rise 1.68 feet	Lake rise of 1.25 Ft. to Max. Elev. 6224.25
Carson River at Clifton 3	50 14	230000	115000
West Walker at Coleville 3	62 15	191000	118000
East Walker At Bridgeport Dam 3	65 16	118000	4 43000
Mono Basin - Leevining Creek	66 17	38600	25500
Rush Creek	73 18	46200	33700
Owens Basin - Bishop Creek	56 19	46300	25900

From Nevada

NOTE: Except for South Yuba and Bowman Area drainages and for Eastern Slope Basins, Truckee, Tahoe, Carson and Walker, the period of record of the snow surveys has been of insufficient length to establish dependably the correlation between snow and run-off. The forecasts, therefore, for other than these drainages are based upon tentative normals and have been ventured more as a provisional guide than a definite prediction. The present number and distribution of snow courses does not permit of these provisional forecasts for all major stream basins in their entirety.

1 Referred to inches of water content.
2 Natural flow (Measured Flow corrected for regulation).
3 Forecast by Nevada Cooperative Snow Surveys Committee.
4 Corrected for 34000 acre-feet estimated reservoir evaporation and irrigation in Bridgeport Valley.

TABLE 3

SEASONAL[1] STREAM FLOW IN PER CENT OF NORMAL[2]

Stream	Seasonal Stream Flow in per Cent of 40-year Mean (1889-1929)				
	Actual				Estimated[3]
	1928-29	1929-30	1930-31	1931-32	1932-33
Sacramento River at Red Bluff	47	65	36	54	45
Feather River at Oroville	35	75	28	63	35
Yuba River at Smartsville	38	69	24	80	45
American River at Fairoaks	37	54	23	84	30
Sacramento River at Sacramento [4]	42	67	31	66	41
Mokelumne River at Clements	40	54	25	87	40
Stanislaus River at Knights Ferry	38	54	23	100	50
Tuolumne River at Jacksonville	47	56	29	100	50
Merced River at Exchequer	44	46	24	100	40
San Joaquin River at Friant	44	44	25	103	50
San Joaquin River near Vernalis [4]	44	50	26	101	49
Combined Sacramento and San Joaquin Rivers [4]	42	63	30	78	43
Kings River at Piedra	45	46	25	110	60
Kaweah River at Three Rivers	50	49	26	117	55
Kern River near Bakersfield	47	52	27	105	60

1 October to September, inclusive - Natural flow (Measured flow corrected for regulation).
2 40-year mean (1889-1929).
3 Estimates based upon all available precipitation and snow data.
4 Including tributaries.

TABLE 4

MINIMUM STREAM FLOW AND MAXIMUM DELTA SALINITY

Stream	Minimum Flow in Second-feet				
	Actual				1 Estimated
	1929	1930	1931	1932	1933
Sacramento River at Red Bluff	3060	2980	2480	2620	2600
Sacramento River at Colusa	1550	1680	820	1530	1800
Sacramento River at Sacramento	2300	2350	2 -131	1900	1600
Feather River at Nicolaus	520	586	0	284	120
American River at Sacramento	59	105	32	159	40
San Joaquin River near Vernalis	565	645	200	965	600
Combined Sacramento and San Joaquin River flow to Delta 3	3090	3230	131	3030	2600

Sacramento-San Joaquin Delta Stations	Maximum Salinity-(High Tide) in parts of Chlorine per 100000 parts of water				
	Actual				4 Estimated
	1929	1930	1931	1932	1933
O and A Ferry	830	800	1390	620	1000
Antioch	600	470	1240	400	700
Collinsville	680	570	1260	500	800
Emmaton	310	250	1000	166	420
Jersey	365	220	910	150	380
Three Mile Slough Bridge	205	150	860	90	300
Rio Vista	67	52	740	28	200
Central Landing	20	15	425	8	70

1 Estimates based upon correlation between seasonal stream flow percentages and minimum flow, as developed from past experience; and assuming a 1933 rice area approximately 20 per cent less than that of 1932 - (preliminary data).

2 Net tidal flow upstream.

3 Mean for minimum 10 day period.

4 Estimates based upon established correlation between stream flow and salinity encroachment.

TABLE 5 — SNOW SURVEY DATA FOR ALL COURSES — APRIL 1, 1933 (CONTINUED)

1 DRAINAGE BASINS AND SNOW COURSES	ELEVATION IN FEET	DATE OF SURVEY	DEPTH OF SNOW INCHES	DENSITY PER CENT	WATER CONTENT INCHES	CORRESPONDING WATER CONTENT LAST YEAR INCHES	2 NORMAL SEASONAL WATER CONTENT INCHES	PERCENTAGE OF NORMAL SEASONAL WATER CONTENT: THIS YEAR	PERCENTAGE OF NORMAL SEASONAL WATER CONTENT: LAST YEAR
YUBA RIVER							3		
WEBBER PEAK	8000	4-1-33	91.4	38.9	35.5	46.8	42.8	83	109
CHURCH MEADOW	7600	3-25-33	67.6	42.9	29.0	38.2	*	*	*
MEADOW LAKE	7200	3-26-33	114.9	38.2	43.9	61.5	54.7	80	112
RED MOUNTAIN	7200	3-28-33	95.6	41.5	39.7	56.1	49.2	81	114
ENGLISH MOUNTAIN	7100	4-5-33	83.1	48.0	39.9	51.6	41.0	97	126
SUMMIT	7020	3-29-33	87.0	40.7	35.4	49.7	40.8	87	122
LAKE STERLING	7000	3-27-33	110.9	38.7	42.9	62.6	55.6	77	113
SAWMILL FLAT	7000	3-28-33	101.5	41.4	42.0	63.4	53.3	79	119
HAYPRESS VALLEY	6800	4-6-33	60.2	50.8	30.6	45.5	*	*	*
SODA SPRINGS	6750	3-29-33	88.3	36.7	32.4	42.7	*	*	*
FURNACE FLAT	6600	3-28-33	100.9	38.5	38.8	55.6	49.2	79	113
LAKE FORDYCE	6500	3-26-33	88.5	39.3	34.8	53.1	43.5	80	122
FINDLEY PEAK	6500	4-4-33	56.2	50.9	28.6	35.7	25.5	112	140
JACKSON MEADOWS	6300	4-6-33	59.0	48.0	28.3	34.4	*	*	*
CISCO	5950	3-25-33	62.4	41.7	26.0	28.8	25.5	102	113
CISCO FLAT (NEW COURSE)	5800	3-25-33	59.6	42.6	25.4		*	*	*
BOWMAN LAKE	5630	4-4-33	45.2	46.4	21.0	26.5	18.4	114	144
LA PORTE	5000	3-30-33	67.9	48.3	32.8	24.3	*	*	*
LAKE SPAULDING	4900	3-30-33	77.1	46.7	36.0	35.6	25.1	143	142
TRUCKEE RIVER							4		
MT. ROSE (IN NEVADA)	10800	4-1-33	37.8	40.1	15.3	32.9	29.2	52	113
BIG MEADOW (IN NEVADA)	8800	4-1-33	41.8	48.2	20.2	27.2	28.1	72	97
GRANITE PEAK (CRYSTAL PK)	8200	3-30-33	57.4	34.8	20.0	25.5	24.7	81	103
WEBBER PEAK	8000	4-1-33	91.4	38.9	35.5	46.8	56.9	62	82
SUMMIT	7020	3-29-33	87.0	40.7	35.4	49.7	47.8	74	104
WARD CREEK	7000	3-30-33	95.9	39.8	38.1	55.3	52.7	72	105
WEBBER LAKE	6800	3-31-33	71.6	38.6	27.7	34.6	38.1	73	91
TRUCKEE #2	6400	3-31-33	39.4	39.3	15.5	18.9	21	74	90
TAHOE CITY	6250	3-29-33	35.9	39.6	14.2	16.8	15.9	89	106
BOCA	5900	3-31-33	20.4	32.4	6.6	8.3	9	73	92
LAKE TAHOE							4		
MT. ROSE (IN NEVADA)	10800	4-1-33	37.8	40.1	15.3	32.9	29.2	52	113
LAKE LUCILLE	8300	4-1-33	108.7	39.1	42.5	64.0	61.2	69	105
RUBICON PEAK #1	8100	3-31-33	98.6	36.3	35.8	55.7	48.9	73	114
MARLETTE LAKE (IN NEV.)	8000	4-1-33	56.2	35.3	19.8	28.8	27.8	72	104
HAGAN'S MDW. (FREEL PK.)	8000	3-30-33	42.9	40.2	17.2	23.5	21.2	82	111
DAGGETT'S PASS (IN NEV.)	7350	3-29-33	36.3	37.2	13.5	19.8	16.3	83	122
FREEL BENCH	7300	3-30-33	31.8	44.1	14.0	15.8	14.5	97	109
WARD CREEK	7000	3-30-33	95.9	39.8	38.1	55.3	51.2	74	108
UPPER TRUCKEE	6400	3-30-33	24.4	46.2	11.3	9.9	10	113	99
TAHOE CITY	6250	3-29-33	35.9	39.6	14.2	16.8	15.9	89	106

*, 1, 2, SEE FOOTNOTES FIRST PAGE OF THIS TABLE.

3 NORMALS BY COMPARISON WITH NATURAL FLOW AT LANGS CROSSING ON SOUTH YUBA, 1890-1932.

4 NORMALS BY COMPARISON WITH FLOW OF TRUCKEE RIVER AT ICELAND 1904-1927. AS COMPUTED AND USED BY NEVADA FORECAST COMMITTEE.

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Data on snow survey marked "N" are sent to H.P. Boardman Calif. Civil Engineer, Calif. Division of Water Resources

TABLE 5 – SNOW SURVEY DATA FOR ALL COURSES – APRIL 1, 1933 (CONTINUED)

1 DRAINAGE BASINS AND SNOW COURSES	ELEVATION IN FEET	DATE OF SURVEY	DEPTH OF SNOW INCHES	DENSITY PER CENT	WATER CONTENT INCHES	CORRESPONDING WATER CONTENT LAST YEAR INCHES	2 NORMAL SEASONAL WATER CONTENT INCHES	PERCENTAGE OF NORMAL SEASONAL WATER CONTENT THIS YEAR	PERCENTAGE OF NORMAL SEASONAL WATER CONTENT LAST YEAR
AMERICAN RIVER							5		
CARSON PASS	8600	3-21-33	80.9	34.5	27.9	49.4	*	*	*
LAKE LUCILLE	8300	4-1-33	108.7	39.1	42.5	64.0	66.5	64	96
RUBICON PEAK NO. 1	8100	3-31-33	98.6	36.3	35.8	55.7	50.6	71	110
SILVER LAKE	7300	3-28-33	62.0	36.3	22.5	30.7	*	*	*
SUMMIT	7020	3-29-33	87.0	40.7	35.4	49.7	49.2	72	101
WARD CREEK	7000	3-30-33	95.9	39.8	38.1	55.3	50.4	76	110
SODA SPRINGS	6750	3-29-33	88.3	36.7	32.4	42.7	*	*	*
LOON LAKE	6400	3-31-33	68.5	42.6	29.2	37.7	*	*	*
CISCO	5950	3-25-33	62.4	41.7	26.0	28.8	31.7	82	91
CISCO FLAT (NEW COURSE)	5800	3-25-33	59.6	42.6	25.4		*	*	*
SIX MILE VALLEY	5700	3-30-33	67.6	43.3	29.3	30.2	*	*	*
LONG MEADOW	5600	3-30-33	51.4	45.3	23.3	26.2	*	*	*
ORELLI'S	5600	3-30-33	69.2	47.1	32.6	36.0	*	*	*
ICE HOUSE	5300	4-4-33	41.4	49.2	20.4	26.5	*	*	*
LAKE SPAULDING	4900	3-30-33	77.1	46.7	36.0	35.6	33.2	108	107
CARSON RIVER							6		
CARSON PASS	8600	3-21-33	80.9	34.5	27.9	49.4	*	*	*
BURNSIDE LAKE	8000	4-1-33	55.8	41.3	23.0	34.5	36.0	64	96
BLUE LAKES	8000	3-24-33	79.4	37.0	29.4	48.8	48.1	61	101
WILLIAMS	7800	3-31-33	57.0	39.1	22.3	34.0	31.8	70	107
SILVER PEAK	6800	3-28-33	40.0	41.7	16.7	23.2	23	73	101
MOKELUMNE RIVER							7		
CARSON PASS	8600	3-21-33	80.9	34.5	27.9	49.4	*	*	*
BLUE LAKES	8000	3-24-33	79.4	37.0	29.4	48.8	43.1	68	113
PACIFIC VALLEY	7500	3-26-33	78.7	35.8	28.2	48.1	*	*	*
LAKE ALPINE	7500	3-27-33	83.2	41.6	34.6	52.1	*	*	*
SILVER LAKE	7300	3-28-33	62.0	36.3	22.5	30.7	*	*	*
BEAR VALLEY RIDGE	6700	3-31-33	70.7	42.0	29.7	36.8	*	*	*
STANISLAUS RIVER							8		
SONORA PASS	8800	3-31-33	47.3	38.6	18.3	33.1	29.1	63	114
LOWER RELIEF VALLEY	8300	3-27-33	74.0	40.7	30.1	56.5	*	*	*
SODA CREEK FLAT	7900	3-28-33	51.5	35.5	18.3	35.4	*	*	*
EAGLE MEADOWS	7500	3-29-33	56.2	39.2	22.0	38.2	*	*	*
LAKE ALPINE	7500	3-27-33	83.2	41.6	34.6	52.1	*	*	*
PACIFIC VALLEY	7500	3-26-33	78.7	35.8	28.2	48.1	*	*	*
RELIEF DAM	7300	3-26-33	49.5	41.2	20.4	36.6	*	*	*
NIAGARA FLAT	6500	3-30-33	51.0	43.9	22.4	32.4	*	*	*
STRAWBERRY LAKE	5700	3-31-33	34.0	48.8	16.6	17.1	*	*	*

*, 1, 2, SEE FOOTNOTES FIRST PAGE OF THIS TABLE.

5 NORMALS BY COMPARISON WITH NATURAL FLOW OF NORTH FORK AT COLFAX, 1890-1932, FOR SUMMIT, CISCO, AND LAKE SPAULDING, AND WITH MIDDLE FORK NEAR EAST AUBURN, 1890-1932, FOR REMAINING COURSES.

6 NORMALS BY COMPARISON WITH FLOW OF CARSON RIVER, 1904-1927. AS COMPUTED AND USED BY NEVADA FORECAST COMMITTEE.

7 NORMAL BY COMPARISON WITH NATURAL FLOW OF NORTH FORK NEAR WEST POINT, 1890-1932.

8 NORMAL BY COMPARISON WITH NATURAL FLOW OF MIDDLE FORK AT SAND BAR FLAT NEAR AVERY, 1890-1932.

TABLE 5 — SNOW SURVEY DATA FOR ALL COURSES — APRIL 1, 1933 (CONTINUED)

1 DRAINAGE BASINS AND SNOW COURSES	ELEVATION IN FEET	DATE OF SURVEY	DEPTH OF SNOW INCHES	DENSITY PER CENT	WATER CONTENT INCHES	CORRESPONDING WATER CONTENT LAST YEAR INCHES	2 NORMAL SEASONAL WATER CONTENT INCHES	PERCENTAGE OF NORMAL SEASONAL WATER CONTENT THIS YEAR	PERCENTAGE OF NORMAL SEASONAL WATER CONTENT LAST YEAR
WALKER RIVER							9		
CENTER MOUNTAIN	9400	3-26-33	82.6	35.1	29.0	47.3	45.7	63	104
SONORA PASS	8800	3-39-33	47.3	38.6	18.3	33.1	31	59	107
BUCKEYE FORKS	8500	3-27-33	52.6	33.4	17.5	30.2	26	67	116
WILLOW FLAT	8250	4-2-33	33.7	36.6	12.3	21.0	17.5	70	120
BUCKEYE ROUGHS	7900	3-28-33	53.0	37.9	20.1	31.8	25.9	78	123
LEAVITT MEADOWS	7200	3-31-33	23.0	41.9	9.6	17.9	16	60	112
TUOLUMNE RIVER							10		
FLETCHER LAKE	10300	3-27-33	68.8	37.1	25.5	39.0	*	*	*
TIOGA PASS — SSPCW	9900	3-26-33	45.5	37.8	17.2	35.0	30.6	56	114
DANA MEADOWS — SSPo.	9700	3-25-33	64.1	34.9	22.4	39.8	34.3	65	116
CENTER MOUNTAIN — Nevada	9400	3-26-33	82.6	35.1	29.0	47.3	43.6	66	108
UPPER LYELL FORKS	8800	3-26-33	40.2	33.3	13.4	25.4	*	*	*
TUOLUMNE MEADOWS	8600	3-26-33	56.2	36.3	20.4	35.8	*	*	*
LOWER RELIEF VALLEY — PG&E	8300	3-27-33	74.0	40.7	30.1	56.5	*	*	*
X WHITE WOLF MEADOWS — Out	8000	3-31-33	78.9	37.8	29.8	36.1	*	*	*
GIN FLAT	7100	3-31-33	87.8	42.4	37.2	51.4	*	*	*
BEEHIVE MEADOW	6500	3-30-33	62.3	45.4	28.3	36.0	*	*	*
STRAWBERRY LAKE	5700	3-31-33	34.0	48.8	16.6	17.1	*	*	*
MERCED RIVER									
FLETCHER LAKE	10300	3-27-33	68.8	37.1	25.5	39.0	*	*	*
MORAINE MEADOW	8800	3-30-33	82.3	37.2	30.6	51.5	*	*	*
SNOW FLAT	8700	3-30-33	102.4	36.2	37.1	52.3	*	*	*
JOHNSON LAKE	8500	3-29-33	87.3	38.0	33.2	53.7	*	*	*
LAKE TENAYA	8150	3-25-33	67.2	63.5	42.7	52.6	*	*	*
X WHITE WOLF MEADOWS Out	8000	3-31-33	78.9	37.8	29.8	36.1	*	*	*
GIN FLAT	7100	3-31-33	87.8	42.4	37.2	51.4	*	*	*
X MERCED LAKE Out.	7000	3-22-33	31.6	38.0	12.0	17.5	*	*	*
PEREGOY MEADOW	7000	3-31-33	68.1	42.0	28.6	46.1	*	*	*
MONO LAKE							11		
GEM PASS	11200	3-29-33	51.9	36.6	19.0	36.7	*	*	*
SADDLEBAGS LAKE	10000	3-27-33	80.3	33.1	26.6	41.9	37.5	71	112
TIOGA PASS	9900	3-26-33	45.5	37.8	17.2	35.0	30.1	57	116
DANA MEADOWS	9700	3-25-33	64.1	34.9	22.4	39.8	33.7	66	118
RHINEDOLLAR LAKE	9500	3-27-33	73.9	31.4	23.2	39.2	32.7	71	120
AGNEW PASS	9450	3-30-33	60.5	40.2	24.3	41.6	*	*	*
GEM LAKE	9200	3-31-33	53.5	38.5	20.6	35.4	25.4	81	139
SYLVESTER MEADOWS	7500	4-1-33		NO SNOW ON COURSE		10.4	*	*	*
SILVER LAKE	7300	3-28-33	13.1	49.6	6.5	13.0	*	*	*
GRANT LAKE	7200	4-1-33		NO SNOW ON COURSE		9.8	*	*	*

*, 1, 2, SEE FOOTNOTES FIRST PAGE OF THIS TABLE.

9 NORMALS BY COMPARISON WITH FLOW OF WALKER RIVER, 1904-1927. AS COMPUTED AND USED BY NEVADA FORECAST COMMITTEE.

10 NORMALS BY COMPARISON WITH NATURAL FLOW OF TUOLUMNE RIVER NEAR HETCH-HETCHY, 1890-1932.

11 NORMALS BY COMPARISON WITH NATURAL FLOW OF RUSH CREEK, 1905-1932, FOR GEM LAKE COURSE AND WITH NATURAL FLOW OF LEEVINING CREEK, 1905-1932 FOR REMAINING COURSES.

TABLE 5 — SNOW SURVEY DATA FOR ALL COURSES — APRIL 1, 1933 (CONTINUED)

1 DRAINAGE BASINS AND SNOW COURSES	ELEVATION IN FEET	DATE OF SURVEY	DEPTH OF SNOW INCHES	DENSITY PER CENT	WATER CONTENT INCHES	CORRESPONDING WATER CONTENT LAST YEAR INCHES	2 NORMAL SEASONAL WATER CONTENT INCHES	PERCENTAGE OF NORMAL SEASONAL WATER CONTENT THIS YEAR	PERCENTAGE OF NORMAL SEASONAL WATER CONTENT LAST YEAR
UPPER SAN JOAQUIN RIVER							12		
PIUTE PASS	11200	3-31-33	60.7	31.6	19.2	44.0	*	*	*
BLACKCAP BASIN	10800	3-23-33	82.4	33.9	27.9	40.9	*	*	*
UPPER BURNT CORRAL MDW.	9700	3-24-33	79.6	34.2	27.2	41.0	*	*	*
MAMMOTH PASS	9500	3-9-33	70.3	38.8	27.3	53.1	48.2	57	110
AGNEW PASS	9450	3-30-33	60.5	40.2	24.3	41.6	*	*	*
KAISER PASS MEADOWS	9200		DATA NOT IN			50.3	*	*	*
CHILKOOT LAKE	7450	4-3-33	73.6	44.3	32.6	55.2	*	*	*
CHILKOOT MEADOWS	7250	4-3-33	68.1	46.2	31.5	52.7	*	*	*
FLORENCE LAKE	7200	3-24-33	30.1	37.2	11.2	14.9	*	*	*
HUNTINGTON LAKE	7000	3-31-33	46.8	45.7	21.4	26.0	*	*	*
OWENS RIVER							13		
UPPER OWENS									
MAMMOTH PASS	9500	3-9-33	70.3	38.8	27.3	53.1	50.3	54	106
MINARETS	9000	3-8-33	56.6	36.5	20.7	43.8	35.2	59	124
MINARETS	8300	3-8-33	42.0	36.9	15.5	33.7	21.9	71	154
MAMMOTH	8300	3-9-33	35.2	39.2	13.8	30.6	22.9	60	134
ROCK CREEK									
ROCK CREEK	10000	3-7-33	24.7	33.2	8.2	18.1	12.8	64	141
ROCK CREEK	9050	3-6-33	23.7	31.0	7.3	16.5	9.4	78	176
ROCK CREEK	8700	3-6-33	24.9	29.5	7.3	16.3	9.2	79	177
BISHOP CREEK									
BISHOP PASS	11400	3-28-33	68.9	36.1	24.9	40.2	*	*	*
PIUTE PASS	11200	3-31-33	60.7	31.6	19.2	44.0	*	*	*
EAST PIUTE PASS	10800	3-31-33	44.4	32.8	14.6	21.7	*	*	*
GEORGE LAKE	10500	4-2-33	35.7	34.4	12.3	30.8	*	*	*
SAWMILL	10200	3-29-33	41.0	32.4	13.3	28.2	20.7	64	136
NORTH LAKE	9500	4-1-33	15.3	33.3	5.1	15.0	*	*	*
SOUTH FORK	9000	3-27-33	11.5	42.6	4.9	11.9	*	*	*
BISHOP PARK	8500	4-1-33		NO SNOW ON COURSE		9.7	*	*	*
BIG PINE CREEK									
BIG PINE CREEK	10000	3-14-33	59.5	29.0	17.2	35.4	22.5	76	157
BIG PINE CREEK	9800	3-14-33	42.6	29.6	12.6	27.7	14.6	86	190
BIG PINE CREEK	9700	3-13-33	49.2	26.6	13.1	27.7	14.8	88	187
COTTONWOOD CREEK									
COTTONWOOD CREEK	11100	3-7-33	25.4	33.8	8.6	18.2	17.0	51	107
COTTONWOOD CREEK	10600	3-7-33	25.8	33.7	8.7	20.9	15.4	57	136

*, 1, 2, SEE FOOTNOTES FIRST PAGE OF THIS TABLE.

12 NORMAL BY COMPARISON WITH NATURAL FLOW OF SAN JOAQUIN RIVER ABOVE MOUTH OF BIG CREEK, 1890-1932.

13 NORMALS BY COMPARISON WITH FLOW OF COTTONWOOD CREEK NEAR OLANCHA 1904-1932, FOR COTTONWOOD COURSES; WITH FLOW OF BIG PINE CREEK NEAR BIG PINE 1904-1932, FOR BIG PINE COURSES; WITH FLOW OF ROCK CREEK ABOVE LITTLE ROUND VALLEY 1904-1932, FOR ROCK CREEK COURSES; WITH FLOW OF HOT CREEK AT COUNTY ROAD 1904-1932, FOR MAMMOTH AND MINARETS COURSES; AND WITH NATURAL FLOW OF BISHOP CREEK AT PLANT #5, 1904-1932, FOR BISHOP CREEK COURSES.

TABLE 5 – SNOW SURVEY DATA FOR ALL COURSES – APRIL 1, 1933 (CONTINUED)

1 DRAINAGE BASINS AND SNOW COURSES	ELEVATION IN FEET	DATE OF SURVEY	DEPTH OF SNOW INCHES	DENSITY PER CENT	WATER CONTENT INCHES	CORRESPONDING WATER CONTENT LAST YEAR INCHES	2 NORMAL SEASONAL WATER CONTENT INCHES	PERCENTAGE OF NORMAL SEASONAL WATER CONTENT	
								THIS YEAR	LAST YEAR
KINGS RIVER							14		
BISHOP PASS	11400	3-28-33	68.9	36.1	24.9	40.2	*	*	*
BLACKCAP BASIN	10800	3-23-33	82.4	33.9	27.9	40.9	*	*	*
BULLFROG LAKE	10600	3-29-33	55.3	36.7	20.3	41.1	*	*	*
COPPER CREEK SUMMIT	10200	4-1-33	84.8	37.8	32.0	49.0	*	*	*
UPPER BURNT CORRAL MDW.	9700	3-24-33	79.6	34.2	27.2	41.0	*	*	*
BEARD MEADOW	9300	3-22-33	72.6	34.2	24.8	40.6	*	*	*
ROWELL MEADOW	9200	3-21-33	70.5	35.4	25.0	52.6	*	*	*
WOODCHUCK MEADOW	9100	3-21-33	69.1	36.7	25.4	43.3	*	*	*
SWAMP MEADOW	9000	3-25-33	81.6	35.0	28.6	52.6	*	*	*
HELMS MEADOW	8500	3-25-33	56.4	44.0	24.8	39.8	*	*	*
JUNCTION MEADOW	8500	3-27-33	49.3	43.0	21.2	31.8	*	*	*
LONG MEADOW	8500	3-24-33	74.2	35.2	26.1	41.7	*	*	*
MORAINE MEADOW	8400	3-19-33	44.1	35.6	15.7	25.1	*	*	*
STATUM MEADOW	8300	3-21-33	71.7	41.8	30.0	48.7	*	*	*
POST CORRAL MEADOW	8200	3-24-33	69.6	38.1	26.5	40.5	*	*	*
SAND MEADOW	8050	3-24-33	66.1	38.0	25.1	41.9	*	*	*
BIG MEADOW	7660	3-24-33	68.2	41.5	28.3	43.9	34.2	83	128
HORSE CORRAL MEADOW	7600	3-22-33	50.4	40.0	20.1	33.6	26.4	76	127
KENNEDY MEADOW	7600	3-25-33	48.7	38.6	18.8	31.4	27.2	69	118
BEAR RIDGE	7400	3-26-33	57.2	42.8	24.5	46.4	*	*	*
FRED MEADOW	7200	3-26-33	55.8	46.2	25.8	41.2	*	*	*
GENERAL GRANT PARK	6660		DATA	NOT	IN	29.8	*	*	*
CLIFF CAMP	6300	3-20-33	50.0	49.6	24.8	26.0	*	*	*
DINKEY SAND FLAT	5500	3-26-33	50.8	45.1	22.9	27.6	*	*	*
KAWEAH RIVER							15		
PANTHER MEADOW	8650	3-29-33	97.5	36.6	35.7	52.0	39.0	92	133
HOCKETT MEADOW	8600	3-1-33	71.5	36.8	26.3	42.2	*	*	*
		3-29-33	74.6	40.2	30.0	42.8	*	*	*
QUINN RANGER STATION	8000	3-30-33	49.0	46.4	22.7	30.9	*	*	*
BIG MEADOW	7660	3-24-33	68.2	41.5	28.3	43.9	33.8	84	130
GIANT FOREST	6500	3-30-33	60.6	44.7	27.1	31.8	*	*	*
KERN RIVER									
ROUND MEADOW	9000	3-29-33	66.6	37.2	24.8	35.7	*	*	*
RAMSHAW MEADOW	8800	3-24-33	31.4	36.9	11.6	16.0	*	*	*
LITTLE WHITNEY MEADOWS	8500	3-22-33	35.7	38.9	13.9	23.0	*	*	*
BONITA MEADOWS	8400	3-28-33	42.4	39.4	16.7	22.7	*	*	*
CASA VIEJA MEADOWS	8400	3-26-33	54.0	34.8	18.8	31.4	*	*	*
MONACHE MEADOWS	8000	3-25-33	28.2	50.4	14.2	14.6	*	*	*
QUINN RANGER STATION	8000	3-30-33	49.0	46.4	22.7	30.9	*	*	*
BEACH MEADOWS	7800	3-27-33	33.8	39.3	13.3	17.2	*	*	*
CANNELL MEADOWS	7500	3-30-33	27.0	45.4	12.3	14.2	*	*	*
BURNT CORRAL MEADOW	6200	3-20-33	31.3	42.2	13.2	12.3	*	*	*
LLOYD MEADOWS	5600	3-18-33	29.9	44.5	13.3	10.6	*	*	*

*, 1, 2, SEE FOOTNOTES FIRST PAGE OF THIS TABLE.

14 NORMALS BY COMPARISON WITH NATURAL FLOW OF KINGS RIVER NEAR HUME, 1890-1932.

15 NORMALS BY COMPARISON WITH NATURAL FLOW OF KAWEAH RIVER NEAR THREE RIVERS, 1890-1932.

TABLE 6

PRECIPITATION DATA — APRIL 1, 1933

1 BASIN AND PRECIPITATION STATION	ELEVATION IN FEET	PRECIPITATION SINCE JULY 1, 1932 INCHES (INCLUDING SNOW AS WATER)	2 NORMAL PRECIPITATION FOR THIS DATE INCHES	PRECIPITATION TO DATE IN PER CENT OF NORMAL	2 NORMAL SEASONAL PRECIPITATION INCHES (JULY TO JUNE)	SNOW ON GROUND INCHES: THIS DATE	SNOW ON GROUND INCHES: 3 MAXIMUM THIS DATE FOR PREVIOUS YEARS	SNOW ON GROUND INCHES: 3 MINIMUM THIS DATE AND YEAR
UPPER SACRAMENTO PIT AND MC CLOUD RIVERS								
JESS VALLEY	5400	7.56				0		
ALTURAS	4360	6.01	9.17	66	12.15	0	5-1917 (8)	0
BIEBER	4200	9.86				0		
MT. SHASTA	3555	29.67	29.31	101	34.37	0	14-1925(20)	0
HAT CREEK	3400	10.13	15.55	65	19.13	0		
FALL RIVER MILLS	3340	10.45	15.88	66	18.84	0	~~12-1925(20)~~	0
MC CLOUD	3270	27.55	43.76	63	51.00	0	12-1925(20)	0
MONTGOMERY CREEK	2119	M 25.73	M 39.95	M 64	55.09			
KENNETT	730	38.10	56.02	68	64.79			
FEATHER RIVER								
BUCKS STORAGE DAM	5100	34.54				72		
WESTWOOD	5000	12.91	24.48	53	28.51	0	9-1927(12)	0
SIERRAVILLE	5000	9.33	23.68	39	26.79	0	24-1922(20)	0-1932
LA PORTE	5000	38.12	61.72	62	73.05	58	114-1922(19)	0
MINERAL	4935	27.19				45	21-1932 (6)	T-1931
PORTOLA	4832	9.49	15.60	61	17.68	0	26-1922(19)	0-1932
INSKIP	4808	35.78	73.73	48	84.28	57	121-1922(20)	0
PRATTVILLE	4600	19.91	34.91	57	39.52	13		
CANYON DAM	4570	20.37	34.09	60	38.84	20	59-1922(20)	0
CHESTER	4550	13.59	29.60	46	33.83	12	56-1922(20)	0
DOYLE	4300	3.08	11.27	27	13.08	0		
VERAMONT	3500	13.87	33.27	42	37.67			
QUINCY	3409	17.69	35.74	49	41.33	0	T-1922(19)	0
WEST BRANCH	3212	34.90	68.16	51	77.94	0	6-1925(20)	0
CARIBOU	3000	20.35	38.53	53	44.44			
SMITHS POINT	2500	30.24	57.12	53	64.97			
LAKE WILENOR	2000	M 20.42						
STORRIE	1760	30.22						
LAS PLUMAS	506	29.37	46.31	63	53.52			

1 CERTAIN OF THE STATIONS ARE NOT ACTUALLY IN THE BASIN SHOWN BUT ARE CLOSELY ADJACENT. STATIONS COMMON TO MORE THAN ONE BASIN ARE LISTED UNDER EACH BASIN.

2 THESE ARE COMPUTED 43-YEAR NORMALS FOR THE PERIOD 1890-1932 INCLUSIVE. WHERE THE PERIODS OF RECORD ARE LESS THAN 43-YEARS, THE NORMALS HAVE BEEN COMPUTED BY COMPARISON WITH THE RECORDS OF STATIONS FOR WHICH THE ACTUAL 43-YEAR DATA ARE COMPLETE. THIS GIVES ALL NORMALS BASED UPON THE SAME PERIOD OF YEARS AND COMPARABLE.

3 THE PERIODS COVERED BY PUBLISHED RECORDS OF SNOW ON THE GROUND DIFFER CONSIDERABLY FOR THE VARIOUS STATIONS, AND LONG-TIME RECORDS ARE AVAILABLE FOR ONLY A FEW STATIONS. IN THESE COLUMNS THE NUMERAL IN PARENTHESES INDICATES THE NUMBER OF YEARS RECORD UPON WHICH THE DATA ARE BASED. THE YEAR OF ZERO MINIMUM IS ONLY SHOWN WHEN ZERO DID NOT OCCUR IN MORE THAN ONE YEAR IN THE PERIOD OF RECORD.

M RECORD TO MARCH FIRST ONLY.

TABLE 6— PRECIPITATION DATA — APRIL 1, 1933 --(CONTINUED)

1 BASIN AND PRECIPITATION STATION	ELEVATION IN FEET	PRECIPITATION SINCE JULY 1, 1932 INCHES (INCLUDING SNOW AS WATER)	2 NORMAL PRECIPITATION FOR THIS DATE INCHES	PRECIPITATION TO DATE IN PER CENT OF NORMAL	2 NORMAL SEASONAL PRECIPITATION INCHES (JULY TO JUNE)	SNOW ON GROUND INCHES: THIS DATE	SNOW ON GROUND INCHES: 3 MAXIMUM THIS DATE FOR PREVIOUS YEARS	SNOW ON GROUND INCHES: 3 MINIMUM THIS DATE AND YEAR
YUBA RIVER								
SODA SPRINGS	6752	27.49	40.91	67	46.78	*58	262-1907(27)	9-1926
CARVIN MINE	5516	33.27				48		
BOWMAN DAM	5347	37.82	60.21	63	70.58	49	35-1927 (8)	0
LA PORTE	5000	38.12	61.72	62	73.05	58	114-1922(19)	0
DRUM FOREBAY	4653	21.03	50.07	42	59.13	14	60-1922(17)	0
LAKE SPAULDING	4600	31.46	58.00	54	68.18	47	113-1922(20)	0
ALLEGHANY	4500	23.59				0		
DEER CREEK	3700	34.14	61.49	56	71.41	9	40-1922(19)	0
CAMPTONVILLE	3500	32.92	60.27	55	69.71	0	2-1925(20)	0
NORTH BLOOMFIELD	3214	27.28	44.86	61	52.57	T	4-1927(15)	0
DOWNIEVILLE	3150	27.97	56.66	49	66.23	0	1-1927(20)	0
NEVADA CITY	2580	26.27	43.20	61	49.82			
DOBBINS	1650	21.27	37.83	56	43.82			
CHUTE CAMP	1500	29.80	49.80	60	57.57			
TRUCKEE AND TAHOE BASINS								
TWIN LAKES	7970	25.99	39.07	66	46.71	64	120-1920(12)	36-1924
PHILLIPS STATION	7050	29.48				60		
SODA SPRINGS	6752	27.49	40.91	67	46.78	*58	262-1907(27)	9-1926
TAHOE	6230	16.24	29.01	56	33.50	34	72-1922(18)	2-1931
AMERICAN RIVER								
TWIN LAKES	7970	25.99	39.07	66	46.71	64	120-1920(12)	36-1924
PHILLIPS STATION	7050	29.48				60		
SODA SPRINGS	6752	27.49	40.91	67	46.78	*58	262-1907(27)	9-1926
BLUE CANYON	4965	24.33	52.41	46	61.36	26	60-1922(20)	0
DRUM FOREBAY	4653	21.03	50.07	42	59.13	14	60-1922(17)	0
RASOR LODGE	3400	30.18				0		
COLFAX	2420	18.65	41.69	45	48.26			
PLACERVILLE	1925	20.58	35.23	58	40.57			
MOKELUMNE RIVER								
TWIN LAKES	7970	25.99	39.07	66	46.71	64	120-1920(12)	36-1924
LAKE ALPINE	7500	30.42				84		
SALT SPRINGS	3660	23.13				0		
MILL CREEK #1 (TIGER CR.)	2400	22.72	41.44	55	48.14	0		
WEST POINT	2326	19.25	35.12	55	40.81			
ELECTRA	700	15.90	28.32	56	32.43			

1, 2, 3, M, SEE FOOTNOTES FIRST PAGE OF THIS TABLE.

* DATA FOR NORDEN OR SUMMIT WHERE DAILY SNOW DEPTHS REPORTED BY SOUTHERN PACIFIC COMPANY ARE READ. U.S.W.B. STATION WAS MOVED A SHORT DISTANCE FROM NORDEN TO SODA SPRINGS IN APRIL, 1931.

TABLE 6 — PRECIPITATION DATA — APRIL 1, 1933 (CONTINUED)

1 BASIN AND PRECIPITATION STATION	ELEVATION IN FEET	PRECIPITATION SINCE JULY 1, 1932 INCHES (INCLUDING SNOW AS WATER)	2 NORMAL PRECIPITATION FOR THIS DATE INCHES	PRECIPITATION TO DATE IN PER CENT OF NORMAL	2 NORMAL SEASONAL PRECIPITATION INCHES (JULY TO JUNE)	SNOW ON GROUND INCHES: THIS DATE	SNOW ON GROUND INCHES: 3 MAXIMUM THIS DATE FOR PREVIOUS YEARS	SNOW ON GROUND INCHES: 3 MINIMUM THIS DATE AND YEAR
STANISLAUS RIVER								
LAKE ALPINE	7500	30.42				84		
STRAWBERRY LAKE	5620	23.37	30.22	77	37.83	33		
SPRING GAP	4875	25.29	37.05	68	43.84	2	27-1922(11)	0
CALAVERAS BIG TREES	4700	30.37				14		
CONFIDENCE	4000	26.02				0		
SAND BAR	2700	22.38	35.77	63	41.93	0	6-1925(11)	0
WALKER RIVER								
LUNDY LAKE	7760	7.62	12.89	59	15.27	13	24-1932 (9)	0
SHIELDS RANCH	5300	6.11	9.82	62	12.28	0		
TUOLUMNE RIVER								
STRAWBERRY LAKE	5620	23.37	30.22	77	37.83	33		
SPRING GAP	4875	25.29	37.05	68	43.84		27-1922(11)	0
LAKE ELEANOR	4650	23.55	36.73	64	43.36	6	15-1925(17)	0
MATHER	4500	21.07				T		
CONFIDENCE	4000	26.02						
HETCH HETCHY	3530	16.81	29.43	57	35.97	0	4-1925(17)	0
GROVELAND	2828	17.70	33.49	53	38.21			
SONORA	1925	16.95	28.41	60	32.77			
MERCED RIVER								
FISH CAMP	5500	16.69	46.82	36	53.24			
YOSEMITE	3960	21.77	30.43	72	35.65	0	8-1925(20)	0
DUDLEY'S	3000	21.87	35.59	61	40.70	T	2-1925(13)	0
MARIPOSA	1932	17.27	25.31	68	29.14			
MERCED FALLS	351	9.33	14.46	64	16.77			
MONO LAKE								
ELLERY LAKE	9600	16.21	35.62	46	42.93	64	79-1932 (9)	13-1926
GEM LAKE	9120	14.06	28.84	49	32.67	43	82-1932 (9)	9-1928
LUNDY LAKE	7760	7.62	12.89	59	15.27	13	24-1932 (9)	0
LEEVINING HEADQUARTERS	7500	10.89				12		
UPPER SAN JOAQUIN RIVER								
HUNTINGTON LAKE	7000	19.52	25.49	76	30.27	43	62-1916(17)	0-1931
FISH CAMP	5500	16.69	46.82	36	53.24	49		
DINKEY MEADOW	5440	32.19	35.78	90	40.18	30	76-1922(12)	0
BIG CREEK	4900	15.66	26.43	59	31.66	0	14-1925(17)	0
CRANE VALLEY	3500	23.76	34.68	68	40.06			
NORTH FORK	3000	19.94	28.46	70	32.91			
AUBERRY	2050	16.92	21.25	80	24.42			

1, 2, 3, M, SEE FOOTNOTES FIRST PAGE OF THIS TABLE.

TABLE 6 – PRECIPITATION DATA – APRIL 1, 1933 (CONTINUED)

1 BASIN AND PRECIPITATION STATION	ELEVATION IN FEET	PRECIPITATION SINCE JULY 1, 1932 INCHES (INCLUDING SNOW AS WATER)	2 NORMAL PRECIPITATION FOR THIS DATE INCHES	PRECIPITATION TO DATE IN PER CENT OF NORMAL	2 NORMAL SEASONAL PRECIPITATION INCHES (JULY TO JUNE)	SNOW ON GROUND INCHES: THIS DATE	SNOW ON GROUND INCHES: 3 MAXIMUM THIS DATE FOR PREVIOUS YEARS	SNOW ON GROUND INCHES: 3 MINIMUM THIS DATE AND YEAR
OWENS RIVER								
SOUTH LAKE	9620	10.91	16.23	67	19.48	32	60–1927 (9)	0–1931
LAKE SEBRINA	9100	9.75	16.15	60	19.01	17	51–1927 (9)	0
BISHOP CREEK	8390	9.80	12.97	76	15.04	0	24–1918(19)	0
BIRCH CREEK	8000	7.91	12.33	64	14.21	8		
INTAKE #2 BISHOP CREEK	8000	5.73	10.82	53	12.84	0		
CROOKED CREEK	6700	5.63	8.96	63	10.37			
BIG PINE POWER PLANT #3	5400	6.55						
INDEPENDENCE	3957	2.87	4.00	72	4.45			
L.A.AQUEDUCT AT INTAKE	3880	2.39	2.88	83	3.14			
COTTONWOOD GATES	3600	2.57	3.11	83	3.52			
KINGS RIVER								
GENERAL GRANT PARK	6660	28.03	34.45	81	41.51	67	80–1932 (9)	0
CLIFF CAMP	6150	30.68	35.44	87	39.77	31	80–1922(12)	0
DINKEY MEADOW	5440	32.19	35.78	90	40.18	30	76–1922(12)	0
BALCH CAMP	1300	17.44	22.36	78	25.99			
PIEDRA	500	14.20	14.54	98	16.62			
KAWEAH RIVER								
GENERAL GRANT PARK	6660	28.03	34.45	81	41.51	67	80–1932 (9)	0
GIANT FOREST	6360	25.70	34.65	74	41.99	53	72–1925(12)	0
THREE RIVERS	870	13.67	16.52	83	19.43			
KERN RIVER								
WINDY SPRINGS	6200	8.93				0		
SPRINGVILLE (NEAR)	4050	24.04	28.60	84	33.75	T	10–1925(20)	0
HOT SPRINGS	3300	M 14.90	M 15.55	M 96	23.77			
GLENNVILLE	3300	14.97	17.04	88	20.37	0	4–1925(16)	0
KERNVILLE	2600	8.25	8.86	93	9.81	0		
SANTA ANA								
TABLE MOUNTAIN OBSERVATORY	7500	F 5.31						
BIG PINES COUNTY PARK	6850	F 12.53						
SQUIRREL INN	5700	23.20	35.43	65	40.76	T	7–1924(19)	0
PRAIRIE FORK	5680	F 10.96						
SEVEN OAKS	5000	12.04	24.81	48	27.48	0	6–1924(19)	0
CAMP BALDY	4300	15.95	27.05		31.02			
BEAUMONT (NEAR)	3045	14.48	19.08	76	22.27			
MILL CREEK #2	2950	12.17	18.99	64	22.75			
SANTA ANA RIVER, BEAUMONT	2850	13.62	23.04	59	26.80			
	2558	12.14	15.64	78	18.46			
LYTLE CREEK	2250	17.14	29.82	57	33.86			

1, 2, 3, M, SEE FOOTNOTES FIRST PAGE OF THIS TABLE.

F TO FEBRUARY 1ST ONLY. – LOS ANGELES FLOOD CONTROL STATION – SUBSEQUENT RECORD LACKING.

TABLE 6 — PRECIPITATION DATA — APRIL 1, 1933 (CONTINUED)

1 BASIN AND PRECIPITATION STATION	ELEVATION IN FEET	PRECIPITATION SINCE JULY 1, 1932 INCHES (INCLUDING SNOW AS WATER)	2 NORMAL PRECIPITATION FOR THIS DATE INCHES	PRECIPITATION TO DATE IN PERCENT OF NORMAL	2 NORMAL SEASONAL PRECIPITATION INCHES (JULY TO JUNE)	SNOW ON GROUND INCHES: THIS DATE	SNOW ON GROUND INCHES: 3 MAXIMUM THIS DATE FOR PREVIOUS YEARS	SNOW ON GROUND INCHES: 3 MINIMUM THIS DATE AND YEAR
SAN GABRIEL								
TABLE MOUNTAIN OBSERVATORY	7500	F 5.31						
BIG PINES COUNTY PARK	6850	F 12.53						
MT. WILSON	5850	22.33	27.24	82	31.14	T	6-1925(16)	0
PRAIRIE FORK	5680	F 10.96						
LITTLE CIENEGA	4650	F 19.28						
OPIDS CAMP	4480	27.72	33.93	82	39.20			
CAMP BALDY	4300	15.95	27.05		31.02			
ALDER CREEK (LOOMIS RANCH)	3550	12.01	17.01	71	20.33			
SAWPIT CANYON	3500	F 14.07						
MT. LOWE OBSERVATORY	3420	13.91	25.87	54	30.33			
COLDBROOK CAMP	3300	F 14.49	F 11.97	F 121	28.98			
CLEAR CREEK	3300	F 24.24						
WOLFSKILL FALLS	2400	F 14.15						
SANTA ANITA FOREST STA.	2000	15.15	28.97	52	33.46			
BIG SANTA ANITA DAM	1250	F 14.11						
LOS ANGELES RIVER								
ALDER CREEK (LOOMIS RANCH)	3550	12.01	17.01	71	20.33			
MT. LOWE OBSERVATORY	3420	13.91	25.87	54	30.33			
CLEAR CREEK	3300	F 24.24						

1, 2, 3, M, SEE FOOTNOTES FIRST PAGE OF THIS TABLE.

F TO FEBRUARY 1ST ONLY — LOS ANGELES COUNTY FLOOD CONTROL STATION — SUBSEQUENT RECORD LACKING.